

DEPARTMENT OF THE ARMY PERMIT

Permittee: Florida Department of Transportation, District 5
Attn: Patrick Muench
719 South Woodland Blvd.
DeLand, Florida 32720

Permit No: SAJ-2007-987(IP-AWP)

Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The placement of clean fill material into 19.62 acres of direct impacts and 12.56 acres of temporary impacts to waters of the United States, wetlands and surface waters, for the widening of State Road (SR) 415 from two lanes to four lanes in northern Seminole and southern Volusia County crossing the St. Johns River. The widening will occur from the southern shore of the St. Johns River to Reed Ellis Road. The work described above is to be completed in accordance with the 5 attachments affixed at the end of this permit instrument.

Project Location: The project is located along SR 415 from the St. Johns River to Reed Ellis Road, in Sections 23,26,27,34, Township 19 South, Range 31 East, Volusia and Seminole Counties, Florida.

Directions to site: From the intersection of SR 46 and SR 415 proceed north on SR 415. The project will begin at the southern shore of the St. Johns River.

Latitude & Longitude: Latitude.....28.8186
Longitude.....81.1870

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Permit Conditions

General Conditions:

1. The time limit for completing the work authorized ends on **May 2, 2013**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature and the mailing address of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to

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ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The Permittee agrees to follow the STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE (Attachment 2) during construction.
2. The permittee agrees to follow the *Standard Manatee Conditions for In-Water Work* (July 2005) during all in water work activities. (Attachment 3)
3. The permittee agrees to the placement of mooring fenders on barges and other large vessels such that, when moored together, the fenders provide a minimum stand-off distance, at and below the water line, of 4 feet under maximum compression.
4. In accordance with the Memorandum of Understanding between the St. Johns River Water Management District (SJRWMD) and the United States Army Corps of Engineers, Jacksonville District signed October 16, 2007 and October 9, 2007 respectively, the SJRWMD shall submit an annual status report and five year update of the mitigation described in the SJRWMD 2008 FDOT Mitigation Plan.
5. Prior to the initiation of any work authorized by this permit, the Permittee shall provide verification to the Corps that a total 23.0 federal forested mitigation bank credits have been purchased from one of the following federally approved mitigation banks: Colbert-Cameron Mitigation Bank (SAJ-1996-2586), East Central Florida Mitigation Bank (SAJ-1995-6135), Farmton Mitigation Bank (SAJ-1998-1836), T-M Econ Mitigation Bank (SAJ-2001-7089). The required verification shall reference this project's permit number (SAJ-2007-987(IP-AWP)).
6. **Reporting Address:** All reports, documentation and correspondence required by the conditions of this permit shall be submitted to the following address: U.S. Army Corps of Engineers, Regulatory Division, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232. The Permittee shall reference this permit number, SAJ-2007-987(IP-AWP), on all submittals.

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7. **Commencement Notification:** Within 10 days from the date of initiating the authorized work, the Permittee shall provide to the Corps a written notification of the date of commencement of work authorized by this permit.

8. **Erosion Control:** Prior to the initiation of any work authorized by this permit, the Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas adjacent to wetlands shall be stabilized using sod, degradable mats, or a combination of similar stabilizing materials to prevent erosion. The erosion control measures shall remain in place and be maintained until all authorized work has been completed and the site has been stabilized.

9. **As-Builts:** Within 60 days of completion of the authorized work or at the expiration of the construction window of this permit, whichever occurs first, the Permittee shall submit as-built drawings of the authorized work and a completed As-Built Certification Form (Attachment 5) to the Corps. The drawings shall be signed and sealed by a registered professional engineer and include the following:

a. A plan view drawing of the location of the authorized work footprint (as shown on the permit drawings) with an overlay of the work as constructed in the same scale as the attached permit drawings (8½-inch by 11-inch). The drawing should show all "earth disturbance," including wetland impacts, water management structures, and any on-site mitigation areas.

b. List any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the As-Built Certification Form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note that the depiction and/or description of any deviations on the drawings and/or As-Built Certification Form does not constitute approval of any deviations by the U.S. Army Corps of Engineers.

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c. The Department of the Army Permit number.

d. Include pre- and post-construction aerial photographs of the project site, if available.

10. **Fill Material:** The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

11. **Performance Standards:** Upon completion of construction activities the Permittee agrees to restore all temporarily impacted wetland areas to pre-existing contour and ensure successful regeneration of wetland vegetation. To meet the objectives of this permit condition, the Permittee shall achieve the following performance standards:

a. At least 80 percent cover by appropriate wetland species (i.e., FAC or wetter).

b. Less than 5 percent cover of Category I and II invasive exotic plant species, pursuant to the most current list established by the Florida Exotic Pest Plant Council at <http://www.fleppc.org>, and shall include the nuisance species primrose willow (*Ludwigia peruviana*), dogfennel (*Eupatorium capillifolium*), Bermudagrass (*Cynodon* spp.), Bahiagrass (*Paspalum notatum*), and cattail (*Typha* spp.).

c. Less than 20 percent mortality of planted wetland species.

The Permittee shall achieve the above performance standards by the end of the 5-year monitoring period, with no maintenance during the 5th year of monitoring.

12. **Monitoring and Reporting Timeframes:** To show compliance with the performance standards the Permittee shall complete the following:

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a. Monitor the temporarily impacted wetlands and submit annual monitoring reports to the Corps until released in accordance with the **Mitigation Release** Special Condition of this permit.

13. Mitigation Release: The Permittee's responsibility to complete the required compensatory mitigation, as set forth in Special Condition 12 of this permit will not be considered fulfilled until mitigation success has been demonstrated and written verification has been provided by the Corps. A mitigation area which has been released will require no further monitoring or reporting by the Permittee; however the Permittee, Successors and subsequent Transferees remain perpetually responsible to ensure that the mitigation area(s) remain in a condition appropriate to offset the authorized impacts in accordance with General Condition 2 of this permit.

14. Reporting Format: Annual monitoring reports shall follow a 10-page maximum report format for assessing compensatory mitigation sites. The Permittee shall submit all documentation to the Corps on 8½-inch by 11-inch paper, and include the following:

a. Project Overview (1 Page):

- (1) Department of the Army Permit Number
- (2) Name and contact information of Permittee and consultant
- (3) Name of party responsible for conducting the monitoring and the date(s) the inspection was conducted
- (4) A summary paragraph defining the purpose for the approved project, acreage and type of aquatic resources impacted, and mitigation acreage and type of aquatic resources authorized to compensate for the aquatic impacts
- (5) Written description on the location and any identifiable information to locate the site perimeter(s)
- (6) Directions to the mitigation site (from a major highway)

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(7) Dates compensatory mitigation commenced and/or was completed

(8) Short statement on whether the performance standards are being met

(9) Dates of any recent corrective or maintenance activities conducted since the previous report submission

(10) Specific recommendations for any additional corrective or remedial actions.

b. Requirements (1 page): List the monitoring requirements and performance standards, as specified in the approved mitigation plan and special conditions of this permit, and evaluate whether the compensatory mitigation project site is successfully achieving the approved performance standards or trending towards success.

c. Summary Data (maximum of 4 pages): Data shall be provided to substantiate the success and/or potential challenges associated with the compensatory mitigation project. Any photo documentation shall be dated and clearly labeled with the direction from which the photo was taken, and be identified on the appropriate maps.

d. Maps (maximum of 3 pages): Maps shall be provided to show the location of the compensatory mitigation site relative to other landscape features, habitat types, locations of photographic reference points, transects, sampling data points, and/or other features pertinent to the mitigation plan.

e. Conclusions (1 page): A general statement shall be included describing the conditions of the compensatory mitigation project. If performance standards are not being met, a brief explanation of the difficulties and potential remedial actions proposed by the Permittee, including a timetable, shall be provided.

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Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899
(33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

() Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

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d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

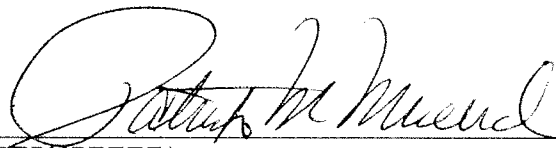
6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this

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permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

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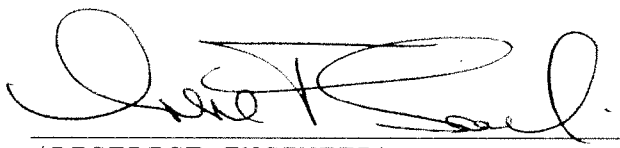
Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.


(PERMITTEE)

5/2/08
(DATE)

PATRICK M. MUENCH
(PERMITTEE NAME-PRINTED)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.


(DISTRICT ENGINEER)

5/2/08
(DATE)

fy Paul L. Grosskruger
Colonel, U.S. Army
District Commander

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When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFeree-SIGNATURE)

(DATE)

(NAME-PRINTED)

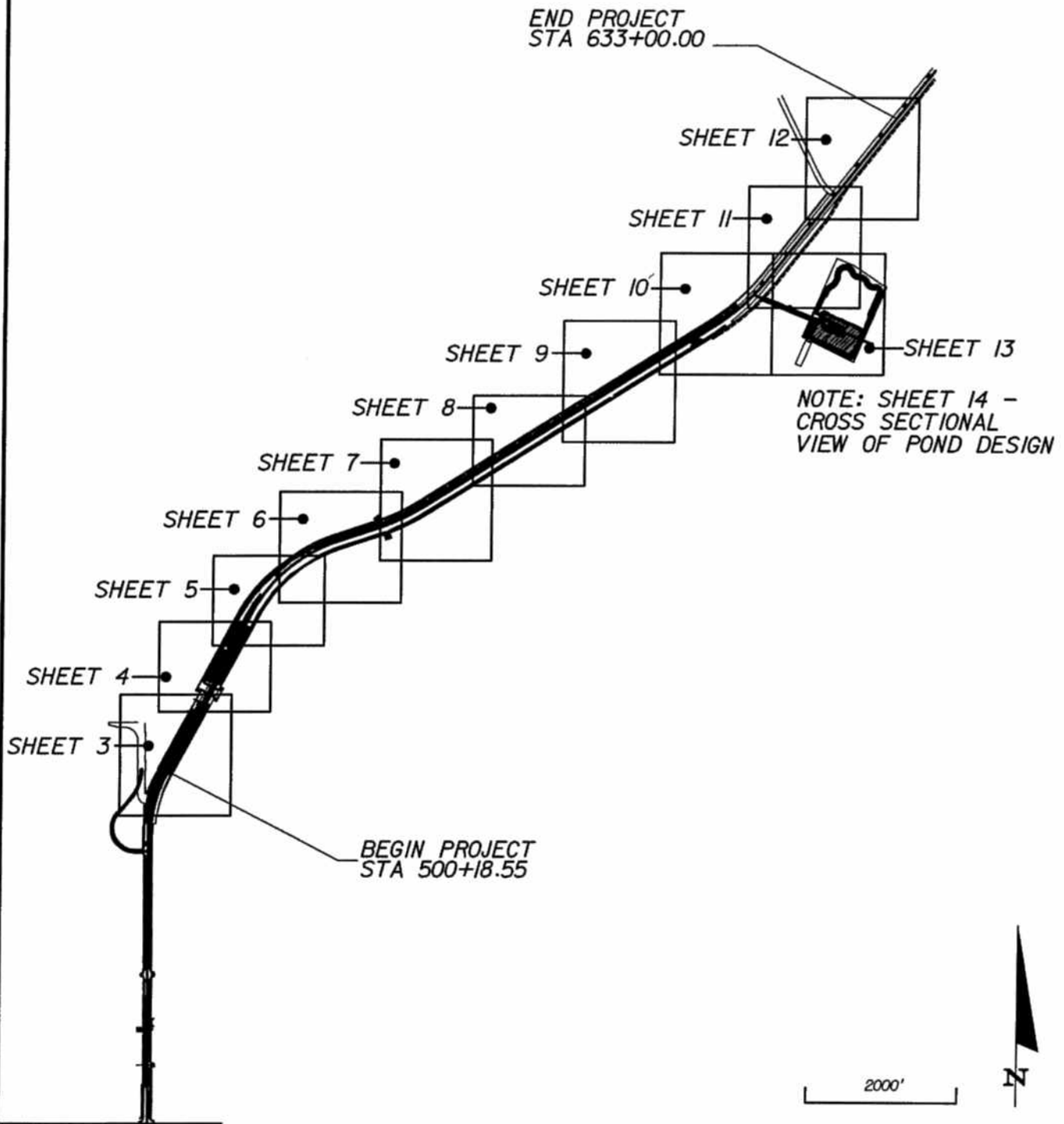
(ADDRESS)

(CITY, STATE, AND ZIP CODE)

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***Attachments to Department of the Army
Permit Number SAJ-2007-987(IP-AWP)***

1. PERMIT DRAWINGS: 14 pages, dated 6/25/07
2. STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE;
Page 1
3. STANDARD MANATEE CONDITIONS FOR IN-WATER WORK (July 2005);
Page 3
4. WATER QUALITY CERTIFICATION: Specific Conditions of the
water quality permit/certification in accordance with General
Condition number 5 on page 2 of this DA permit. 7 pages.
5. AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER: 1 page



PROJECT: FDOT - STATE ROAD 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD

WATER BODY: ST. JOHNS RIVER

PURPOSE: KEY SHEET
DREDGE AND FILL SKETCHES

DATUM: NAVD

SECTIONS 23, 26, 27,
COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA

SHEET 1 OF 14

U.S. Army Corps of Engineers
Permit # SAS-2007-987
Date: 4/25/08
Attachment: 1

DRMP
ENGINEERS - SURVEYORS - PLANNERS - SCIENTISTS
DYER, RIDDLE, MILLS & PRECOURT, INC.
941 LAKE BALDWIN LANE
ORLANDO, FLORIDA 32814
(407) 896-0594

HORIZON
engineering group, inc.

2500 Mollond Center Pkwy., Suite 300 Mollond, Florida 32751
Certificate of Authorization No.: 00009544 Phone: 407.644.7155
LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407.644.7855



Lisa M. H. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056

GENERAL NOTES

1. STRICT ADHERENCE TO SECTION 104 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION WILL BE USED IN CONJUNCTION WITH THIS APPLICATION TO PROVIDE REASONABLE ASSURANCE THAT WATER QUALITY STANDARDS WILL NOT BE VIOLATED. SILT FENCES, HAY BALES AND TURBIDITY BARRIERS WILL BE USED AS REQUIRED.
2. TYPES OF EQUIPMENT INVOLVED IN THE CONSTRUCTION WILL INCLUDE: GRADEALL, DUMP TRUCKS, CRANES, SCRAPERS, BULLDOZERS, PUMPS AND FRONT END LOADER. THE EQUIPMENT WILL BE TRUCKED OR SELF PROPELLED TO THE SITE.
3. TURBIDITY CURTAINS, SILT FENCES, SEDIMENT BASINS, SAND BAGS, HAY BALES OR SOME COMBINATION OF THESE WILL BE USED AS DIRECTED BY THE PROJECT ENGINEER TO MAINTAIN STATE WATER QUALITY STANDARDS.
4. EXCAVATED MATERIAL THAT IS SUITABLE WILL BE USED IN CONSTRUCTION OF THE ROADWAY EMBANKMENT AND SHOULDERS. UNSUITABLE MATERIAL WILL BE DISPOSED OF AND CONTAINED IN UPLAND SITES PROVIDED BY THE CONTRACTOR.
5. FILL MATERIAL SHALL BE OF SATISFACTORY MATERIAL THAT IS CLEAN AND COMPACTIBLE INTO A SUITABLE AND ENDURING ROADWAY.
6. DURING THE CONSTRUCTION OR EXTENSION OF MULTIPLE OPENING STRUCTURES, THE CONTRACTOR, AS DIRECTED BY THE PROJECT ENGINEER, SHALL BE REQUIRED TO PHASE CONSTRUCT DRAINAGE STRUCTURES IN ORDER TO MAINTAIN ADEQUATE WATER FLOW.
7. ALL ELEVATION SHOWN IN THIS PERMIT APPLICATION ARE REFERENCED TO U.S.G.S. NORTH AMERICAN VERTICAL DATUM OF 1988
8. AREAS OF IMPACT REQUIRED FOR THE PROJECT ARE SHOWN ON PAGE 2A.

PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD

WATER BODY: ST. JOHNS RIVER BRIDGE

PURPOSE: GENERAL NOTES

DATUM: NAVD

SECTIONS 23, 26, 27, 34, TOWNSHIP 19 SOUTH, RANGE 31 EAST

COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA

SHEET 2 OF 14



Lisa M. H. Olivera
Signed
DATE 6.25.07
REG. FLA. ENG. NO. 56056

SHEET No.	FLUCFCS CODE	WETLAND DESCRIPTION	MITIGATABLE IMPACTS				NON-MITIGATABLE IMPACTS		
			PERMANENT WETLAND IMPACT (AC)	TEMPORARY CONSTRUCTION IMPACT (AC)	PERMANENT SHADING IMPACT (AC)	WATER QUALITY IMPACT (AC)	TEMPORARY CONSTRUCTION IMPACT UNDER PERMANENT SHADING IMPACT (AC)	EXISTING BRIDGE SPAN REMOVAL (AC)	EXISTING BRIDGE SPAN ADDITION (AC)
3	64I	FRESHWATER MARSH		3.92			0.36		
3A	630	FORESTED WETLANDS	0.48						
	64I	FRESHWATER MARSH			0.36			- 0.0I	0.0I
4	5I0	SURFACE WATER		0.08					
	64I	FRESHWATER MARSH		3.98					
4A	5I0	SURFACE WATER	0.13					- 0.33	0.33
	64I	FRESHWATER MARSH						- 0.17	0.17
5	5I0	SURFACE WATER		1.03					
	64I	FRESHWATER MARSH		1.02					
5A	5I0	SURFACE WATER	0.0I						
	64I	FRESHWATER MARSH	1.4I						
6	630	FORESTED WETLANDS	0.14						
	64I	FRESHWATER MARSH	0.69	0.2I					
	643	WET PRAIRIE/MARSH	1.8I	0.48					
7	630	FORESTED WETLANDS	2.83						
	643	WET PRAIRIE/MARSH	0.72	0.36					
8	630	FORESTED WETLANDS	3.07						
	643	WET PRAIRIE/MARSH	0.75	0.39					
9	630	FORESTED WETLANDS	0.78						
	643	WET PRAIRIE/MARSH	2.45	0.57					
10	630	FORESTED WETLANDS	0.42						
	643	WET PRAIRIE/MARSH	2.19	0.48					
13	530	RESERVOIRS	1.74	0.04		3.55			
		TOTAL	19.62	12.56	0.36	3.55	0.36	- 0.5I	0.5I

PROJECT: FOOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD
WATER BODY: ST. JOHNS RIVER BRIDGE
PURPOSE: GENERAL NOTES
DATUM: NAVD

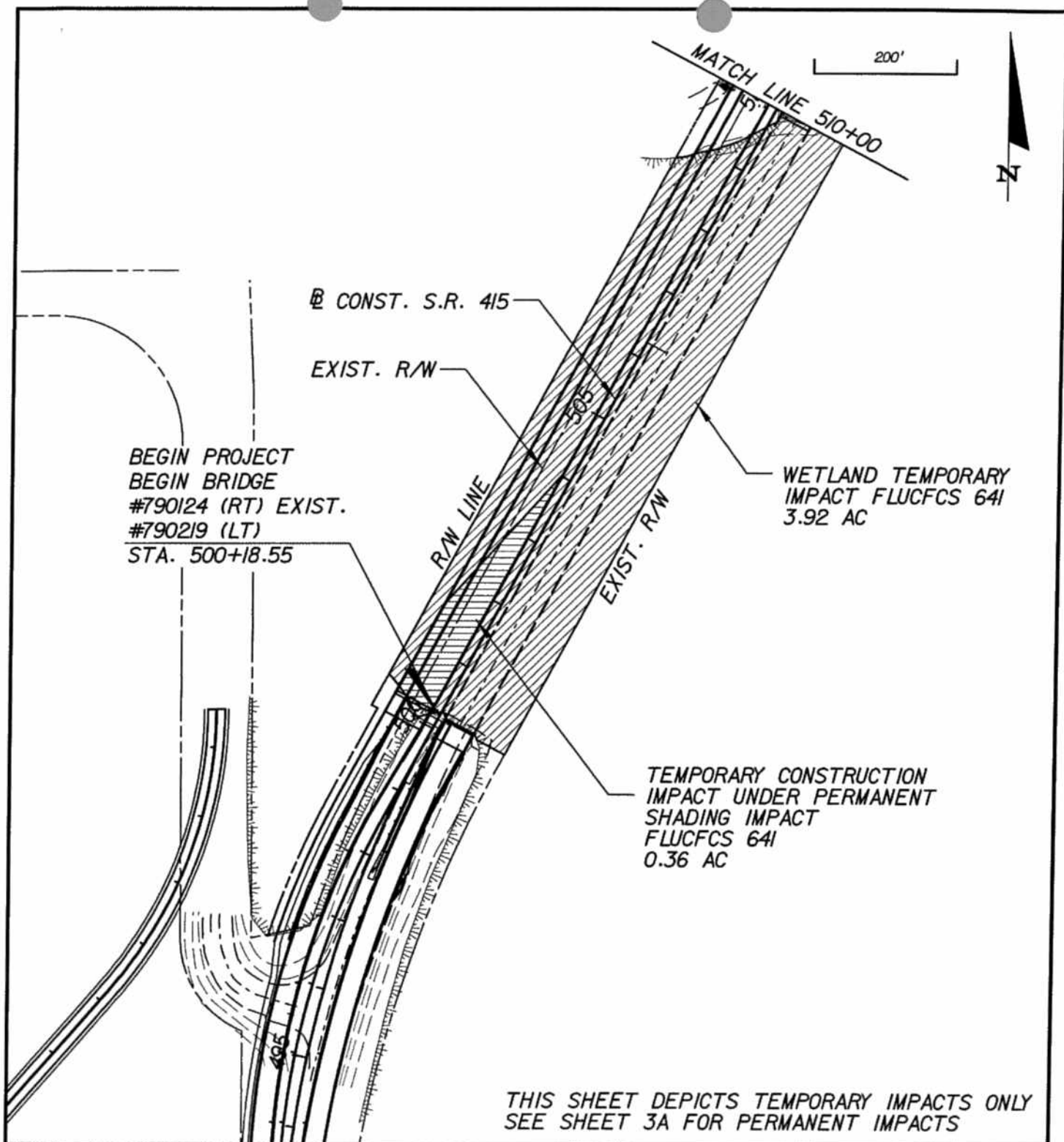
SECTIONS 23, 26, 27, 34, TOWNSHIP 19 SOUTH, RANGE 31 EAST
COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA
SHEET 2A OF 14



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LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407-644-7855



Lisa M. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056



THIS SHEET DEPICTS TEMPORARY IMPACTS ONLY
SEE SHEET 3A FOR PERMANENT IMPACTS

PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD
WATER BODY: ST. JOHNS RIVER
PURPOSE: DREDGE AND FILL SKETCHES
DATUM: NAVD

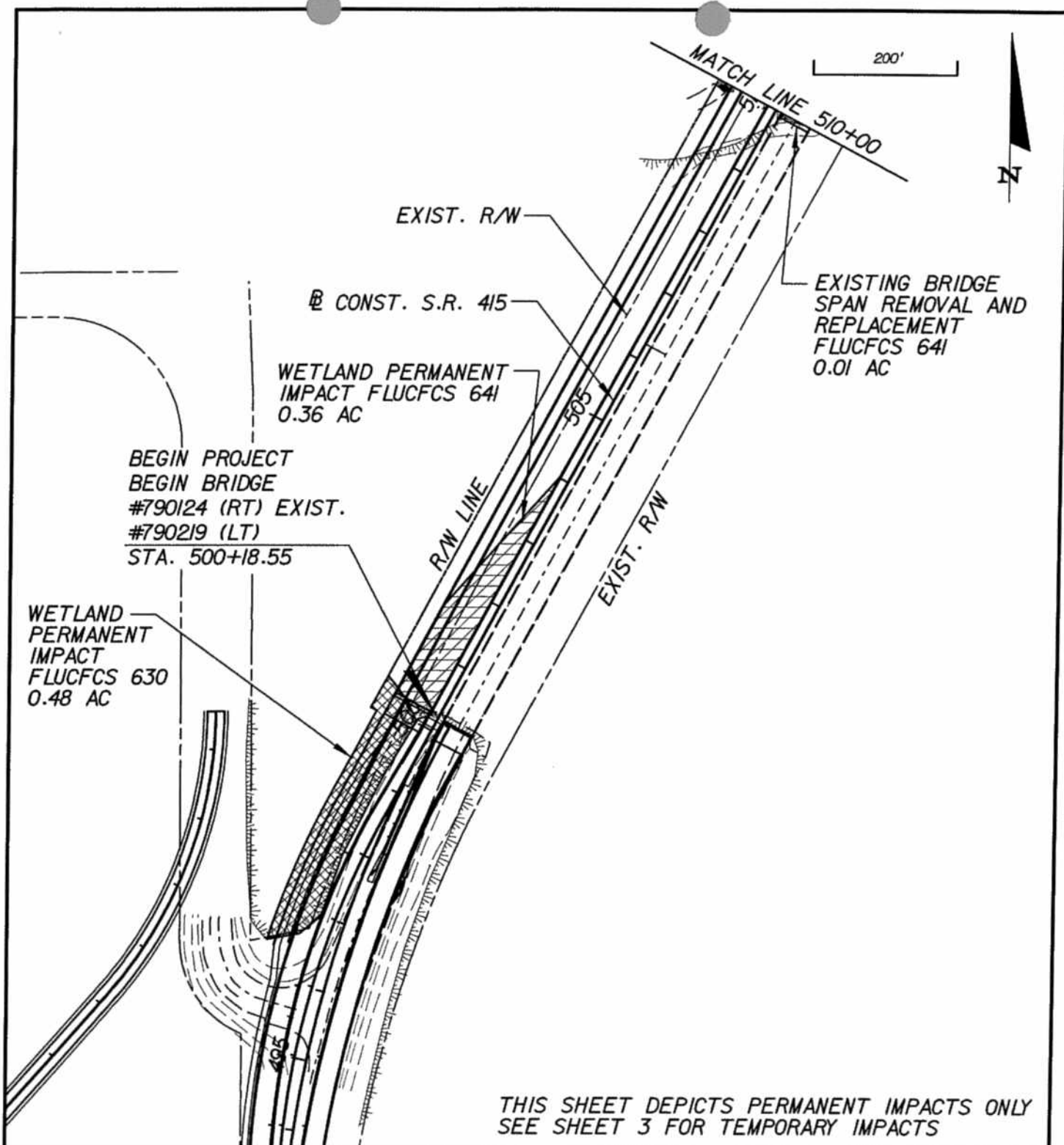
SECTIONS 23, 26, 27, 34, TOWNSHIP 19 SOUTH, RANGE 31 EAST
COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA
SHEET 3 OF 14

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LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407-644-7855



Lisa M. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056



THIS SHEET DEPICTS PERMANENT IMPACTS ONLY
SEE SHEET 3 FOR TEMPORARY IMPACTS

PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD
WATER BODY: ST. JOHNS RIVER
PURPOSE: DREDGE AND FILL SKETCHES
DATUM: NAVD

SECTIONS 23, 26, 27, 34, TOWNSHIP 19 SOUTH, RANGE 31 EAST
COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA
SHEET 3A OF 14



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Lisa M. H. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056

200'

N

WETLAND TEMPORARY
IMPACT FLUCFCS 510
0.07 AC

EXISTING BRIDGE
(TO BE REMOVED)

WETLAND TEMPORARY
IMPACT FLUCFCS 641
3.84 AC

MATCH LINE 520+00

WETLAND TEMPORARY
IMPACT FLUCFCS 510
0.01 AC

EXIST. R/W

EXIST. R/W

CONST. S.R. 415

ST. JOHN'S RIVER

R/W LINE
EXIST. R/W

WETLAND TEMPORARY
IMPACT FLUCFCS 641
0.14 AC

MATCH LINE 510+00

THIS SHEET DEPICTS TEMPORARY IMPACTS ONLY
SEE SHEET 4A FOR PERMANENT IMPACTS

CONST. S.R. 415

SCALE:
1"=50' HORIZ.
1"=25' VERT.

WETLANDS

TEMPORARY
IMPACT

SPAN REMOVAL
AND
REPLACEMENT

EXIST. R/W

EXIST. R/W

STATION 514+00

PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD

WATER BODY: ST. JOHNS RIVER

PURPOSE: DREDGE AND FILL SKETCHES

DATUM: NAVD

SECTIONS 23, 26, 27, 34, TOWNSHIP 19 SOUTH, RANGE 31 EAST

COUNTY OF SEMINOLE

COUNTY OF VOLUSIA

STATE OF FLORIDA

SHEET 4 OF 14



DRMP
ENGINEERS - SURVEYORS - PLANNERS - SCIENTISTS

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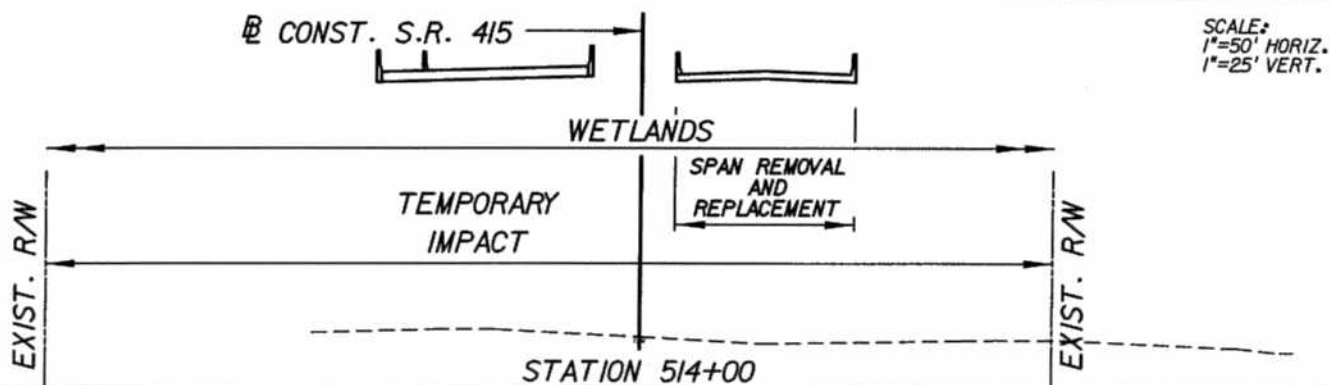
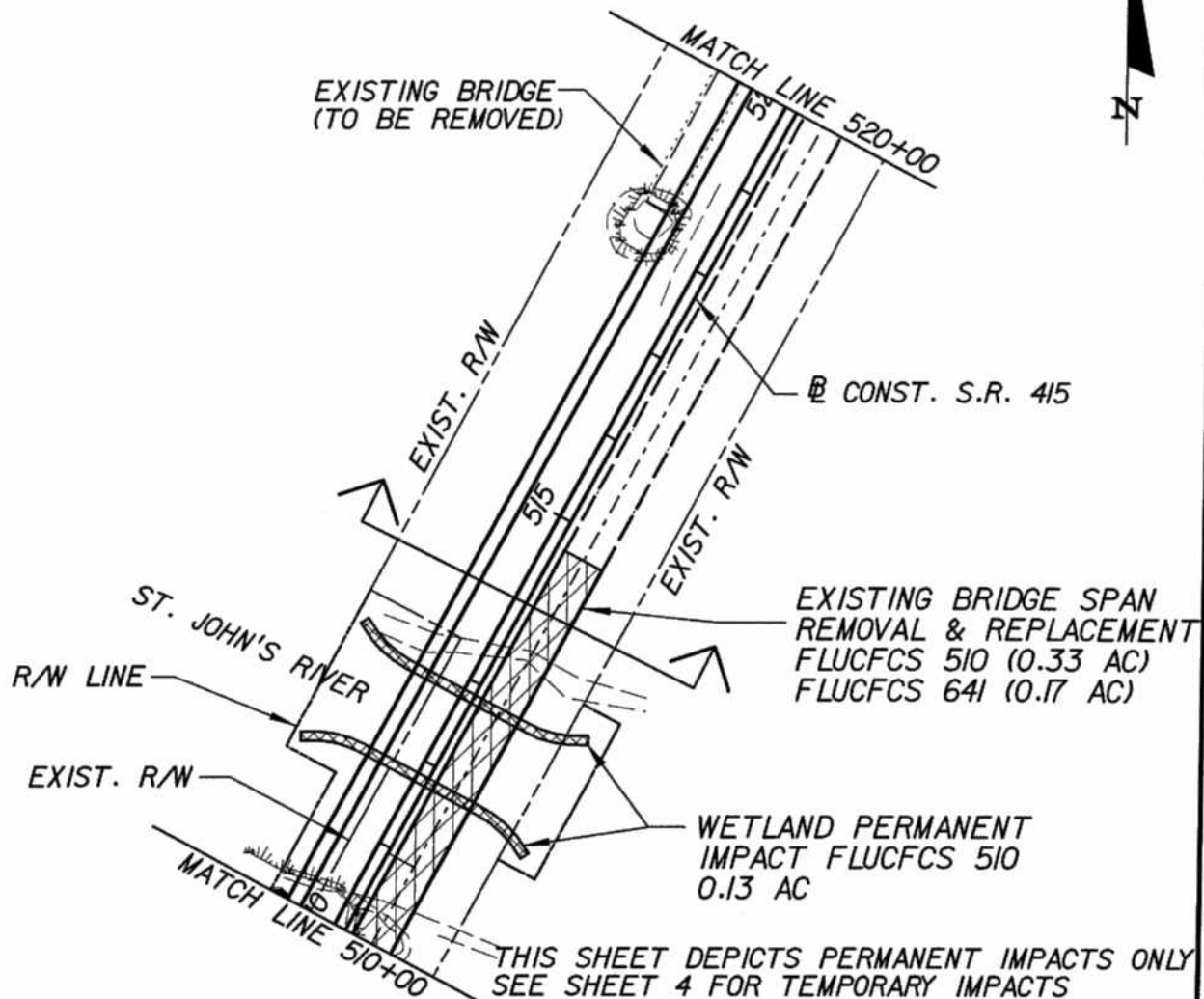
Lisa M. H. Olivera
Signed

DATE 6-25-07

REG. FLA. ENG. NO. 56056

200'

N



PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD

WATER BODY: ST. JOHNS RIVER

PURPOSE: DREDGE AND FILL SKETCHES

DATUM: NAVD

SECTIONS 23, 26, 27, 34, TOWNSHIP 19 SOUTH, RANGE 31 EAST

COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA

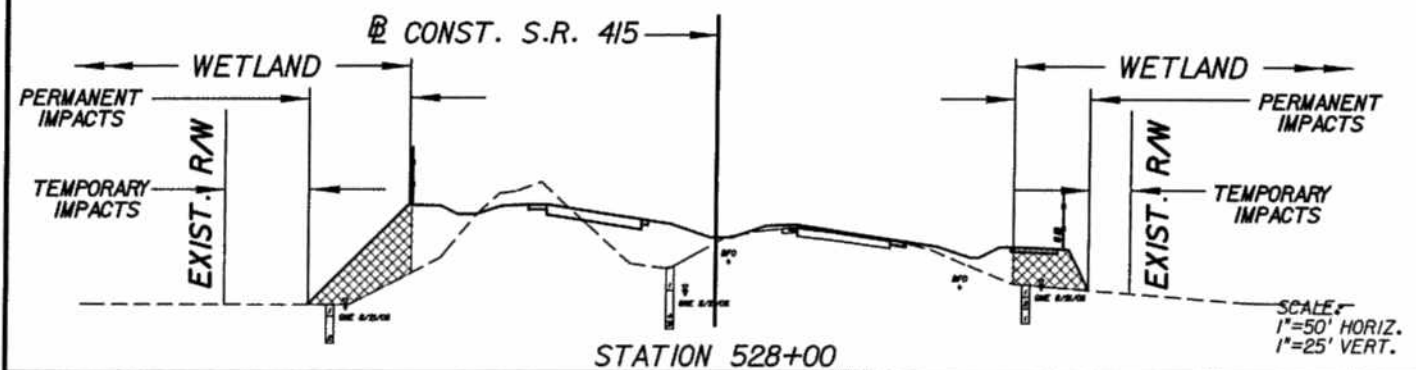
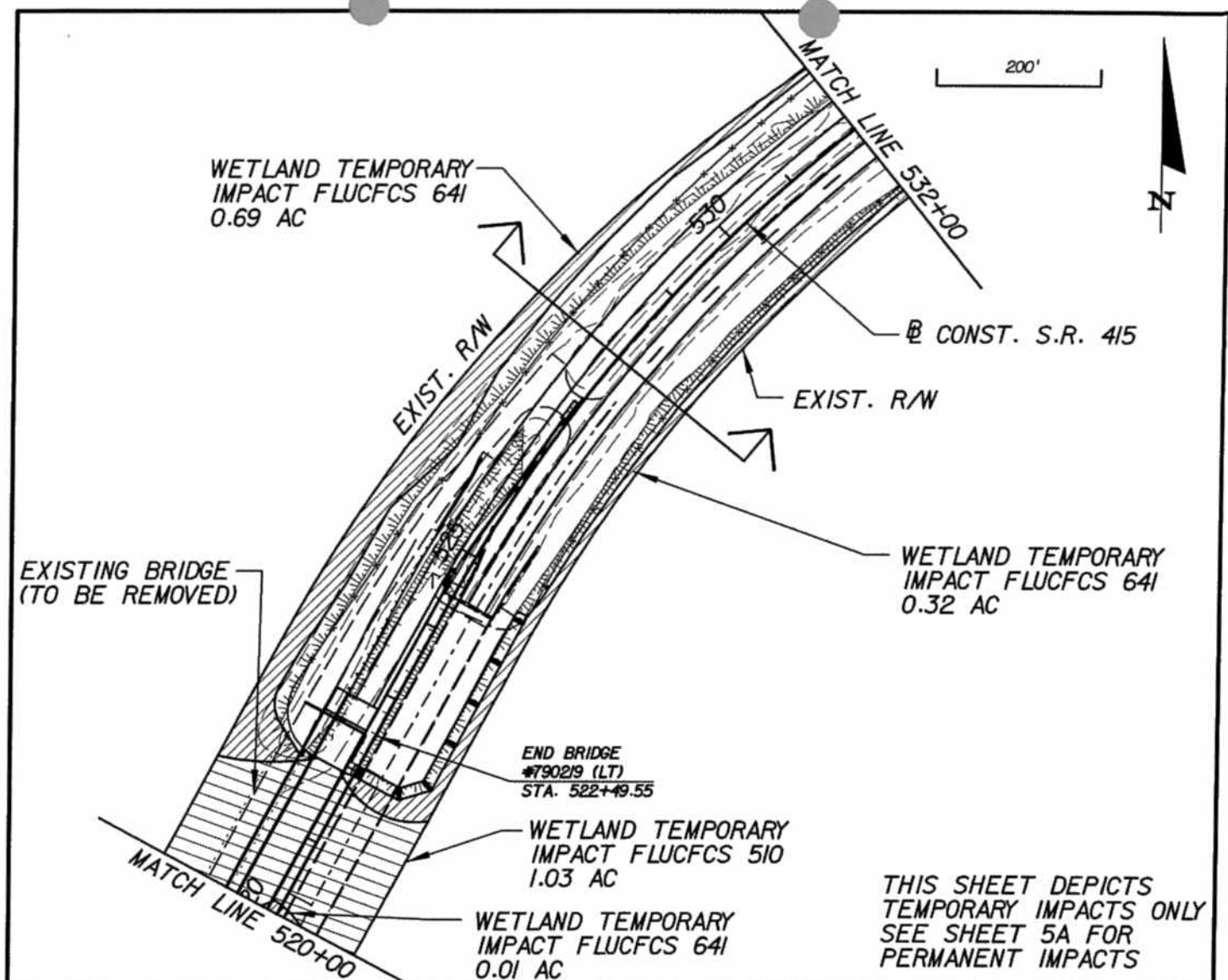
SHEET 4A OF 14

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
DYER, RIDDLE, WILLS & PRECOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0594

HORIZON
engineering group, inc.
2500 Mallard Center Pkwy., Suite 300 Mallard, Florida 32751
Certificate of Authorization No.: 00009544 Phone: 407-644-7755
LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407-644-7855



Lisa M. H. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056



PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD

WATER BODY: ST. JOHNS RIVER

PURPOSE: DREDGE AND FILL SKETCHES

DATUM: NAVD

SECTIONS 23, 26, 27, 34, TOWNSHIP 19 SOUTH, RANGE 31 EAST

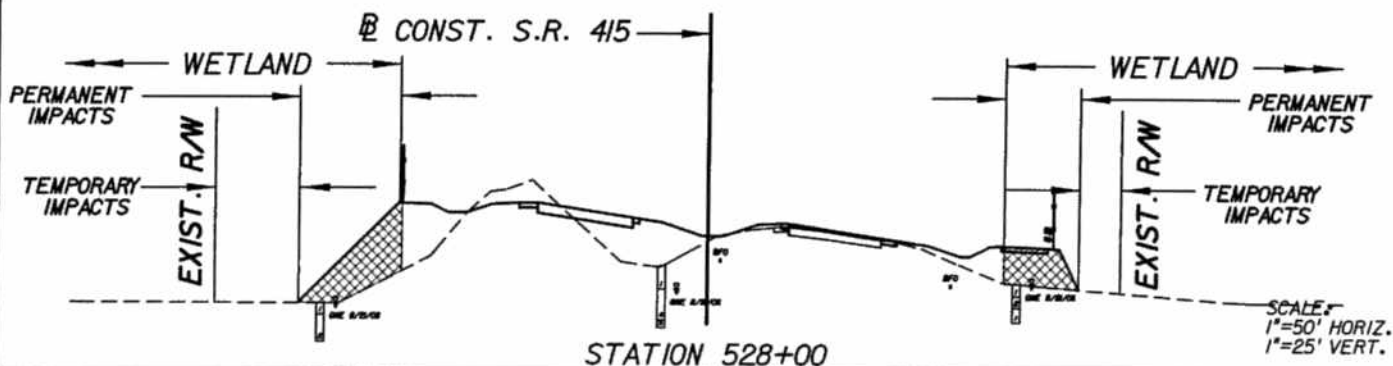
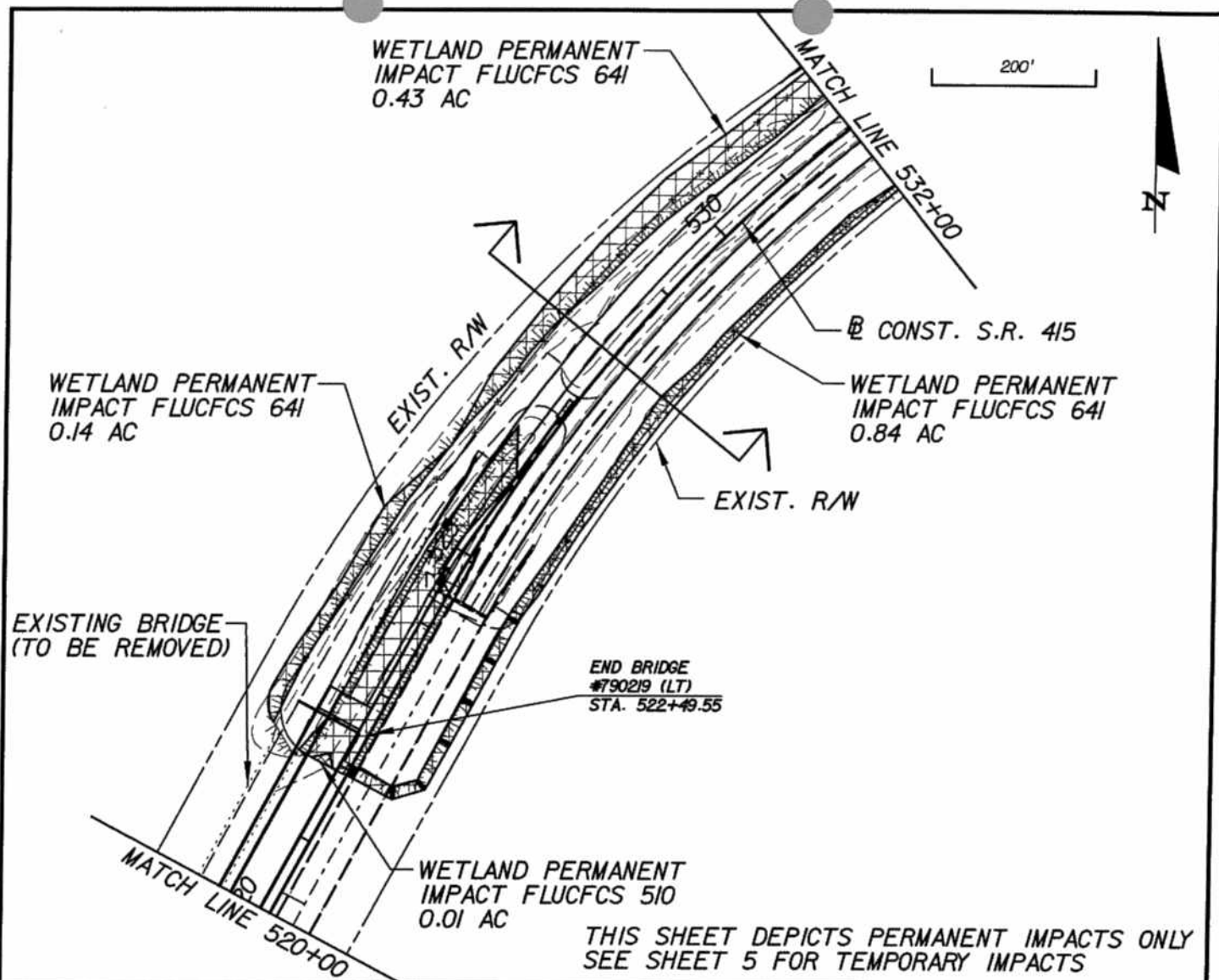
COUNTY OF SEMINOLE
COUNTY OF VOLUSIA

STATE OF FLORIDA

SHEET 5 OF 14



Lisa M. H. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056



PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD

WATER BODY: ST. JOHNS RIVER

PURPOSE: DREDGE AND FILL SKETCHES

DATUM: NAVD

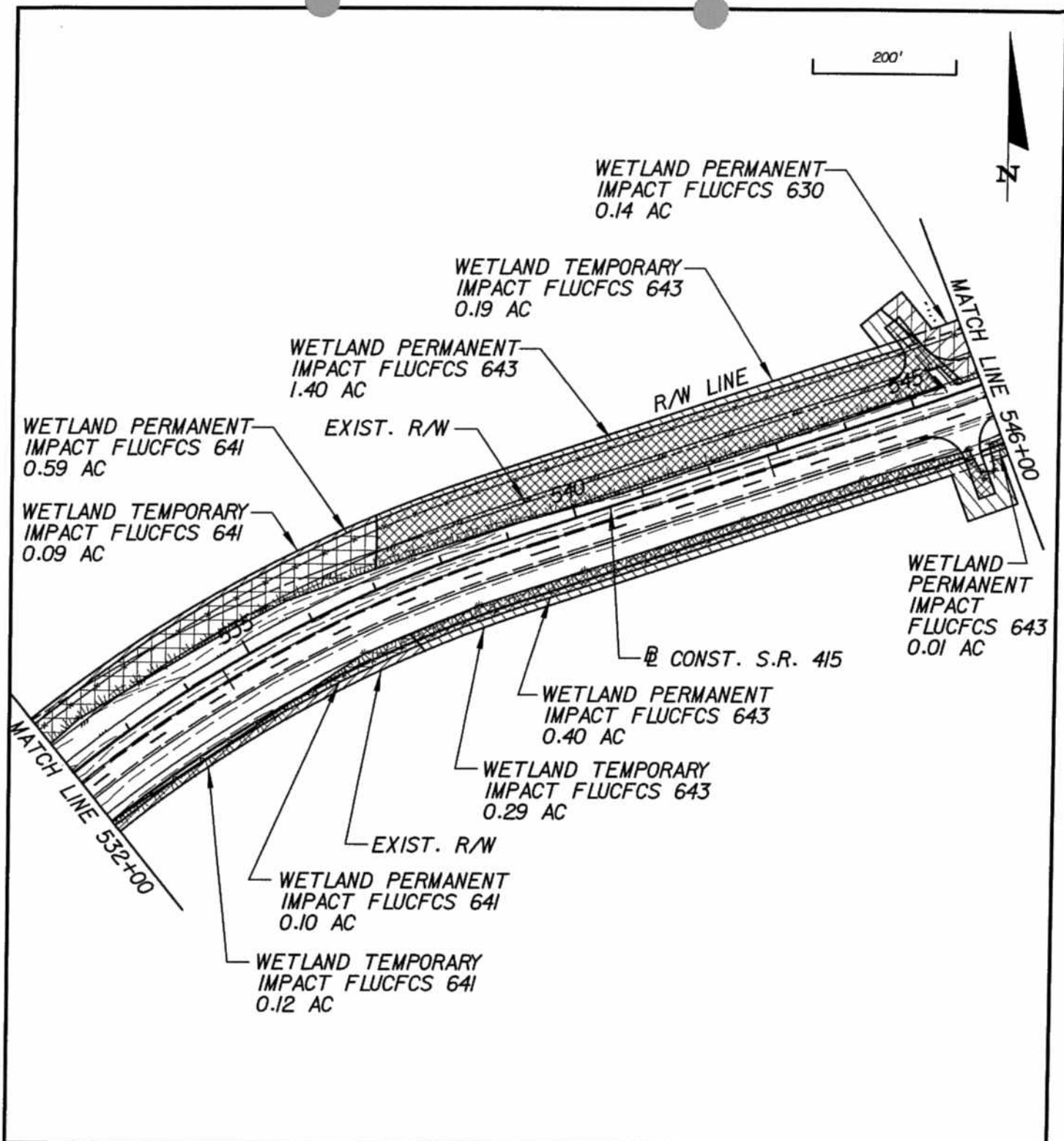
SECTIONS 23, 26, 27, 34, TOWNSHIP 19 SOUTH, RANGE 31 EAST

COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA

SHEET 5A OF 14



Lisa M. H. Olivera
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REG. FLA. ENG. NO. 56056



PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD

WATER BODY: ST. JOHNS RIVER

PURPOSE: DREDGE AND FILL SKETCHES

DATUM: NAVD

SECTIONS 23, 26, 27, 31, TOWNSHIP 19 SOUTH, RANGE 31 EAST

COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA

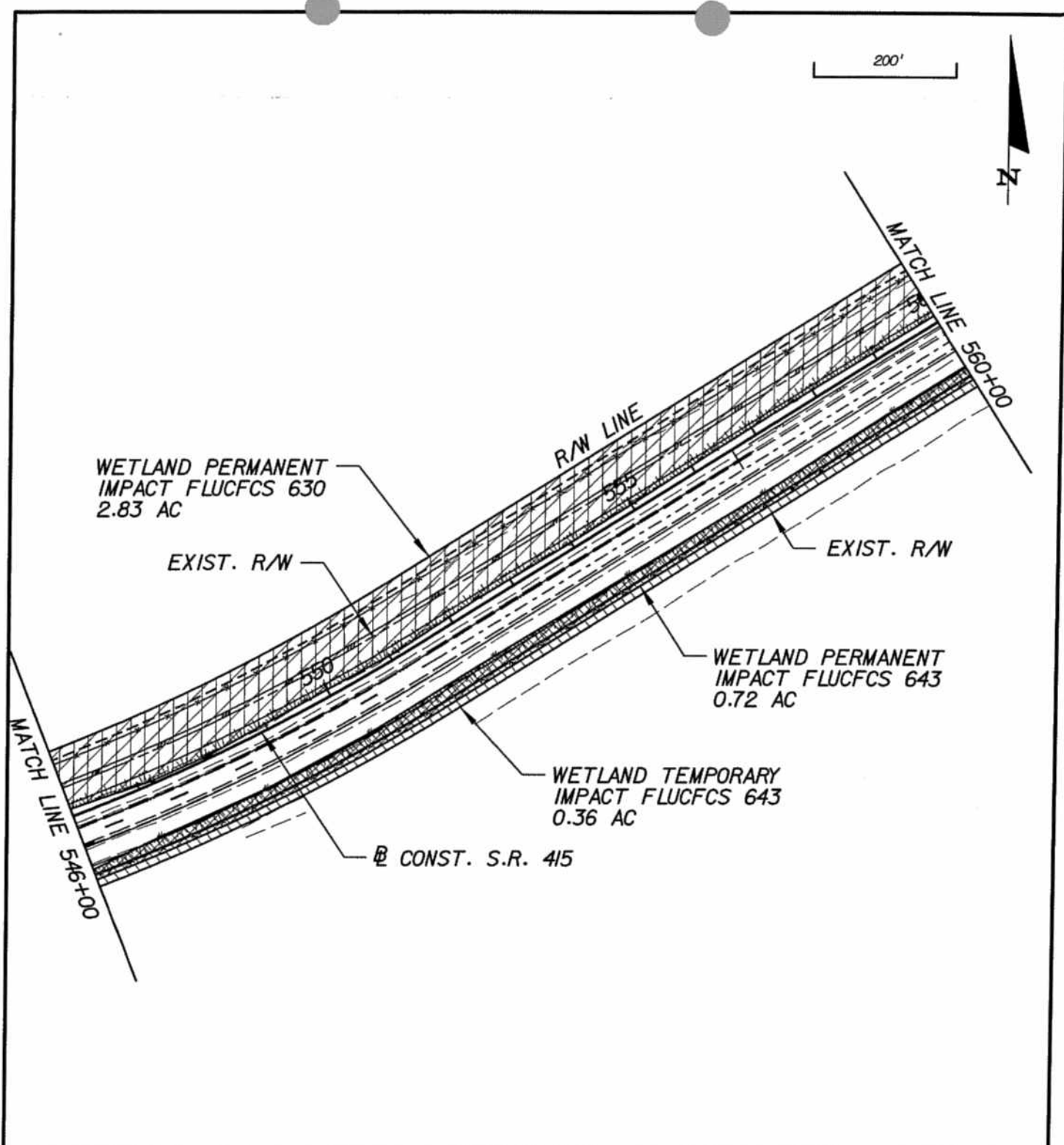
SHEET 6 OF 14



2500 Maitland Center Pkwy., Suite 300 Maitland, Florida 32751
Certificate of Authorization No.: 00009544 Phone: 407.644.7755
LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407.644.7855



Lisa M. H. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056



PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD

WATER BODY: ST. JOHNS RIVER

PURPOSE: DREDGE AND FILL SKETCHES

DATUM: NAVD

SECTIONS 23, 26, 27, 31, TOWNSHIP 19 SOUTH, RANGE 31 EAST

COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA

SHEET 7 OF 14

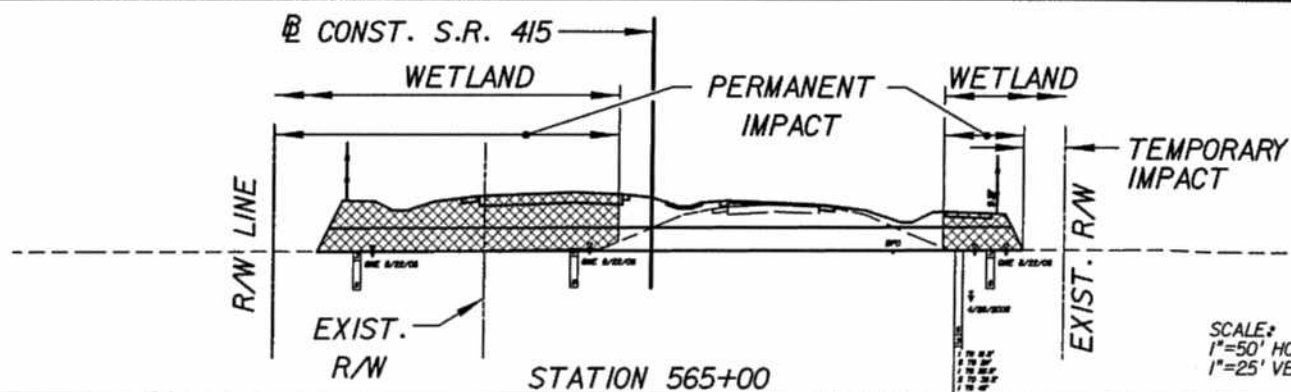
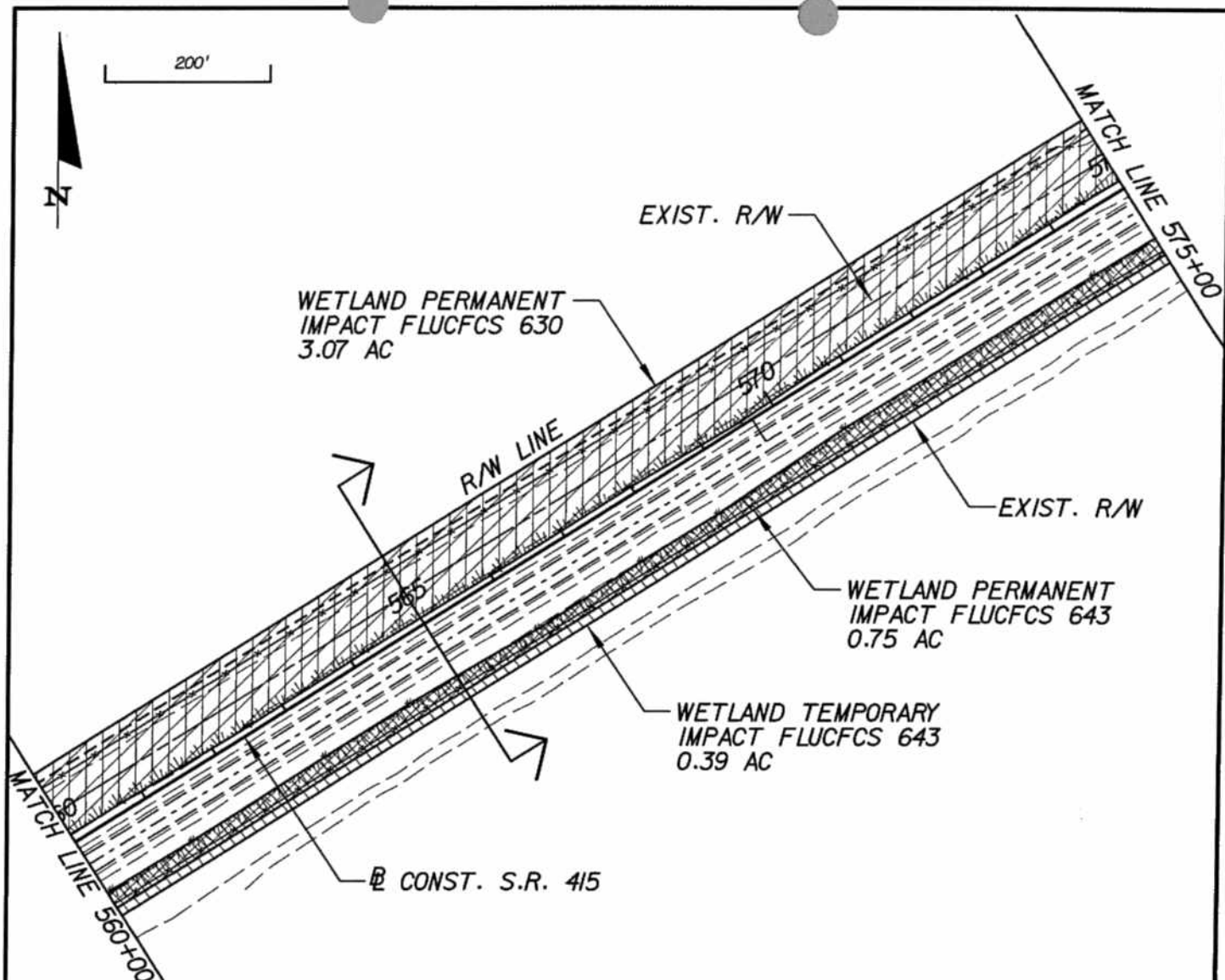
DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
DYER, RIDDLE, WILLS & PRECOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0594

HORIZON
engineering group, inc.

2500 Mallard Center Pkwy., Suite 300 Mallard, Florida 32751
Certificate of Authorization No.: 00009544 Phone: 407 544 7755
LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407 544 7855



Lisa M. H. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056



PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD

WATER BODY: ST. JOHNS RIVER

PURPOSE: DREDGE AND FILL SKETCHES

DATUM: NAVD

SECTIONS 23, 26, 27, 31, TOWNSHIP 19 SOUTH, RANGE 31 EAST

COUNTY OF SEMINOLE
COUNTY OF VOLUSIA

STATE OF FLORIDA

SHEET 8 OF 14

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DYER, RIDDLE, MILLS & PRECOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
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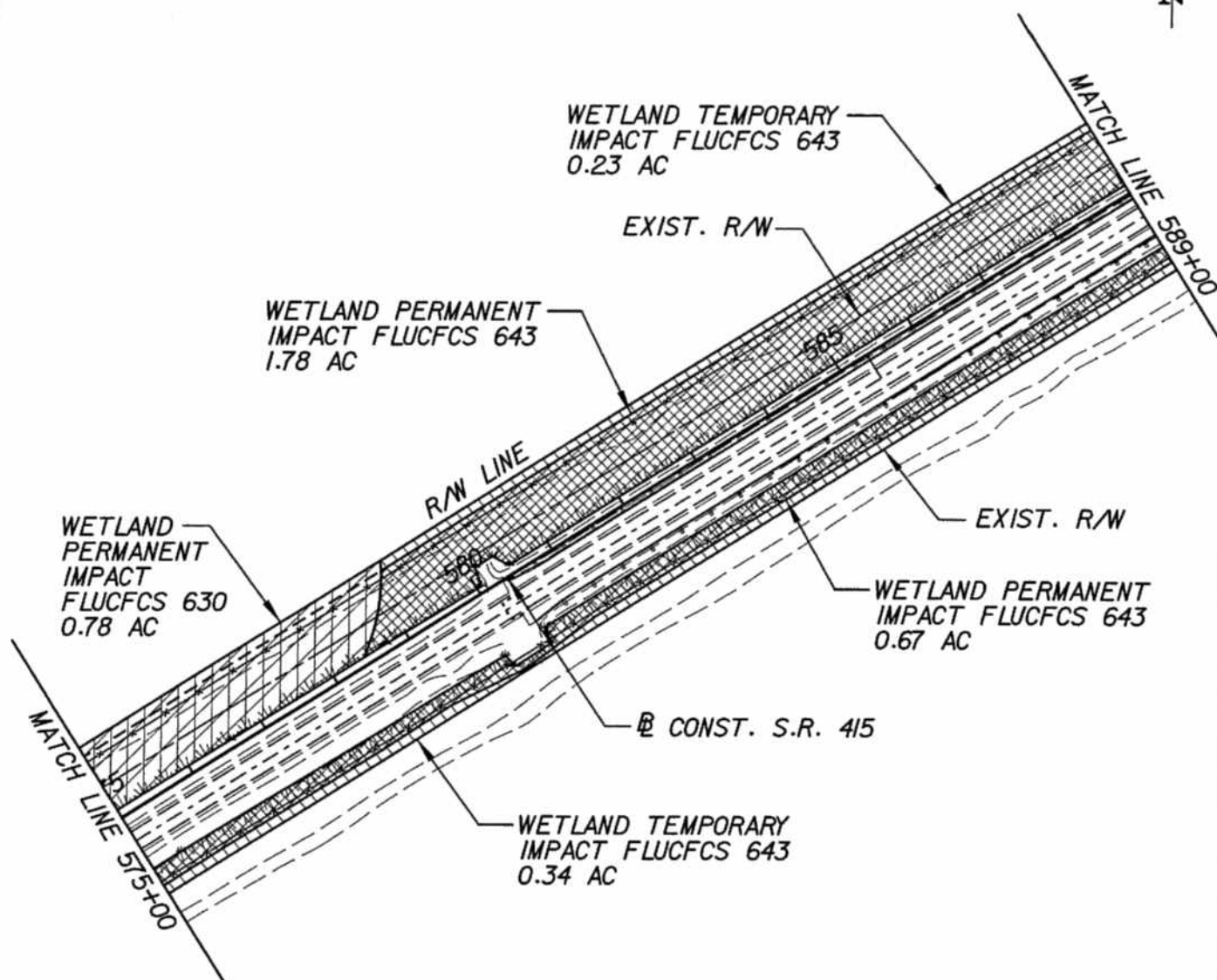
2500 Mallard Center Pkwy., Suite 300 Mallard, Florida 32751
Certificate of Authorization No.: 00009544 Phone: 407.644.7755
LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407.644.7855



Lisa M. H. Olivera
Signed
DATE 6.25.07
REG. FLA. ENG. NO. 56056

200'

N



PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD

WATER BODY: ST. JOHNS RIVER

PURPOSE: DREDGE AND FILL SKETCHES

DATUM: NAVD

SECTIONS 23, 26, 27, 31, TOWNSHIP 19 SOUTH, RANGE 31 EAST

COUNTY OF SEMINOLE
COUNTY OF VOLUSIA

STATE OF FLORIDA

SHEET 9 OF 14

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
DYER, RIDDLE, MILLS & PRECOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
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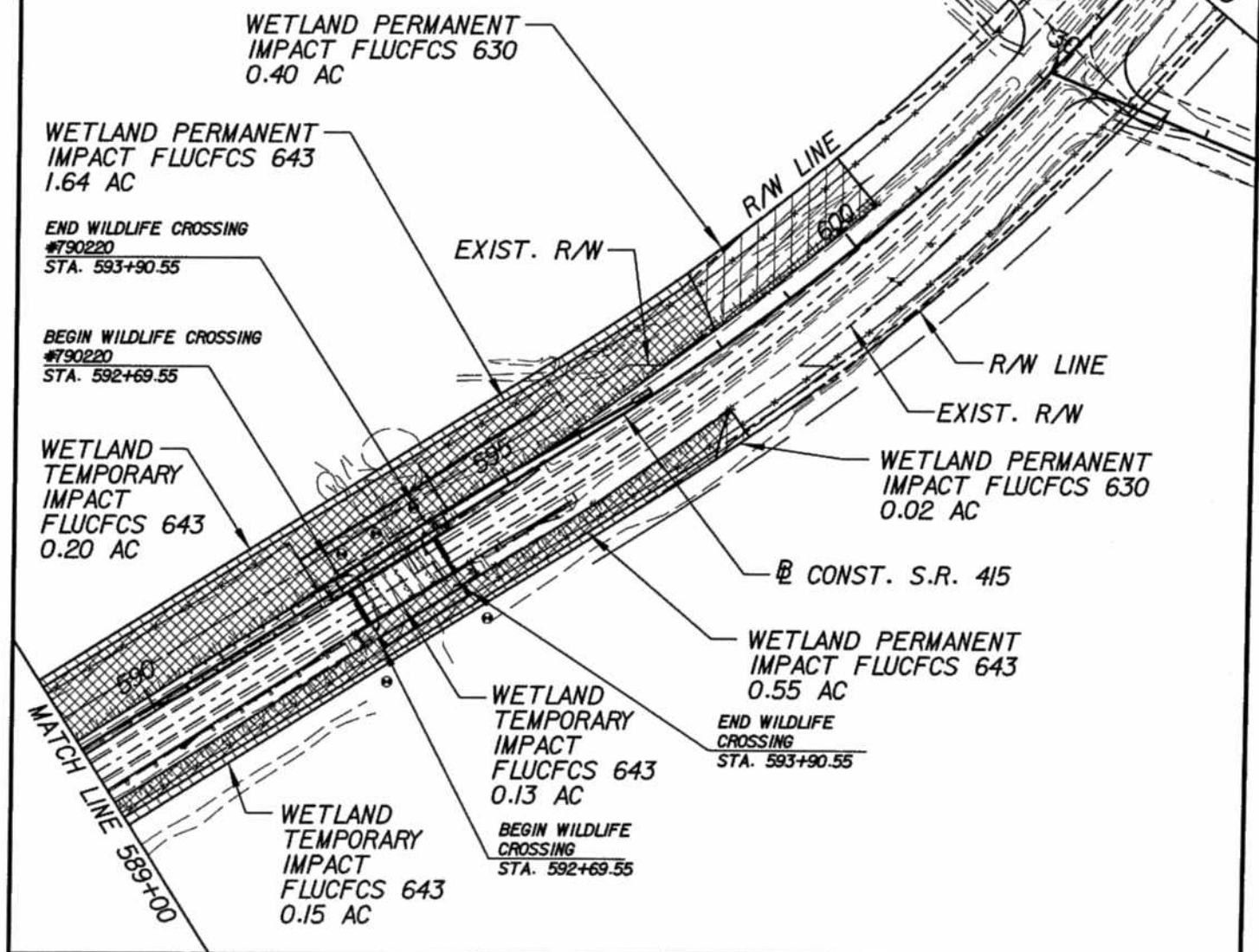
HORIZON
engineering group, inc.

2500 Maitland Center Pkwy., Suite 300 Maitland, Florida 32751
Certificate of Authorization No.: 00009544 Phone: 407.644.7755
LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407.644.7855



Lisa M. H. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056

200'



PROJECT:	FDOT SR 415 ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD	SECTIONS 23, 26, 27, 31, TOWNSHIP 19 SOUTH, RANGE 31 EAST
WATER BODY:	ST. JOHNS RIVER	COUNTY OF SEMINOLE COUNTY OF VOLUSIA
PURPOSE:	DREDGE AND FILL SKETCHES	STATE OF FLORIDA
DATUM:	NAVD	SHEET 10 OF 14

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
DYER, RIDDLE, MILLS & PRECOURT, INC.
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ORLANDO, FLORIDA 32803
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HORIZON
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2500 Maitland Center Pkwy., Suite 300 Maitland, Florida 32751
Certificate of Authorization No.: 00009544 Phone: 407-644-7755
LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407-644-7855



Lisa M. H. Olivera
Signed
DATE 6-25-07
REG. F.L.A. ENG. NO. 56056

200'

N

NOTE:
NO WETLAND IMPACTS
STA. 605+00 THRU 619+00

EXIST. R/W

EXIST. R/W

CONST. S.R. 415

R/W LINE

R/W LINE

FOR ADDITIONAL INFORMATION
CONCERNING IMPACTS WITHIN
THE POND SITE SEE SHEET 14

MATCH LINE 605+00

MATCH LINE 619+00

PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD
WATER BODY: ST. JOHNS RIVER
PURPOSE: DREDGE AND FILL SKETCHES
DATUM: NAVD

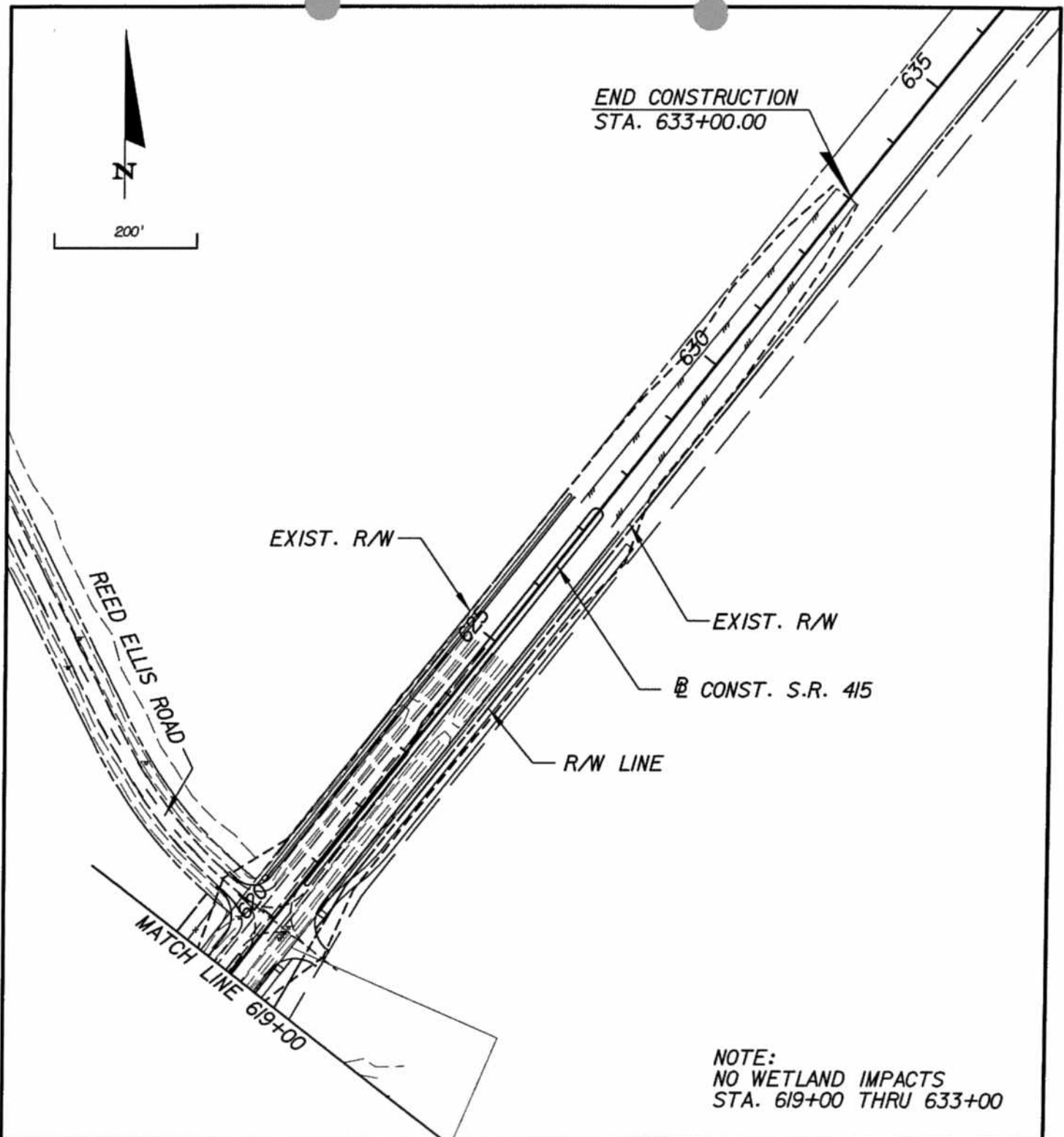
SECTIONS 23, 26, 27, 31, TOWNSHIP 19 SOUTH, RANGE 31 EAST
COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA
SHEET 11 OF 14

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
DYER, RIDDLE, MILLS & PRECOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0594

HORIZON
engineering group, inc.
2500 Mallard Center Pkwy., Suite 300 Mallard, Florida 32751
Certificate of Authorization No.: 00009544 Phone: 407.644.7755
LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407.644.7855



Lisa M. H. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056



NOTE:
NO WETLAND IMPACTS
STA. 619+00 THRU 633+00

PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD
WATER BODY: ST. JOHNS RIVER
PURPOSE: DREDGE AND FILL SKETCHES
DATUM: NAVD

SECTIONS 23, 26, 27, 31, TOWNSHIP 19 SOUTH, RANGE 31 EAST
COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA
SHEET 12 OF 14

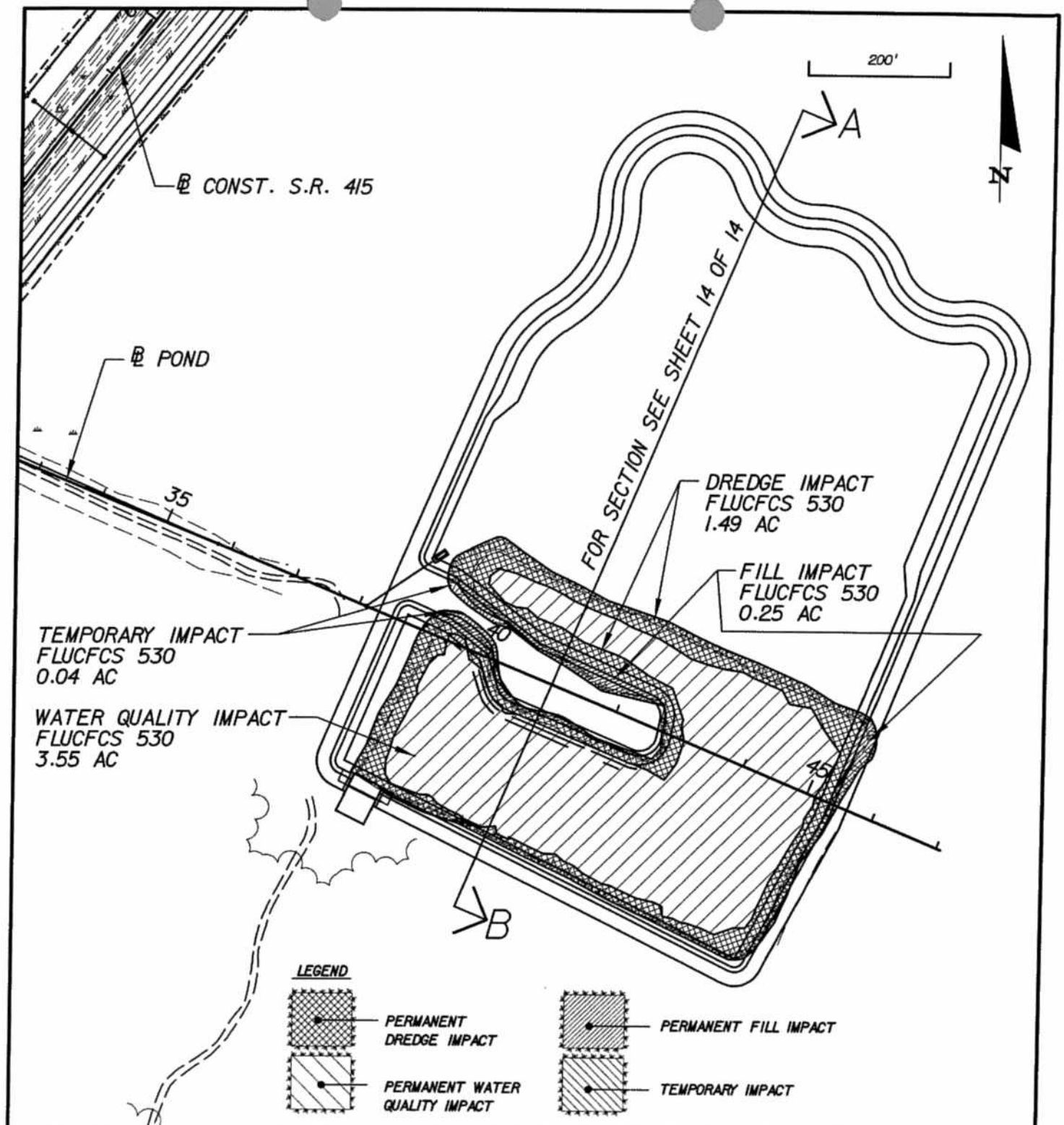
DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
DYER, RIDDLE, MILLS & PRECOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
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HORIZON
engineering group, inc.

2500 Mallard Center Pkwy., Suite 300 Mallard, Florida 32751
Certificate of Authorization No.: 00009544 Phone: 407.644.7755
LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407.644.7855



Lisa M. H. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056



PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD

WATER BODY: ST. JOHNS RIVER

PURPOSE: DREDGE AND FILL SKETCHES

DATUM: NAVD

SECTIONS 23, 26, 27, 31, TOWNSHIP 19 SOUTH, RANGE 31 EAST

COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA

SHEET 13 OF 14

DRMP
ENGINEERS - SURVEYORS - PLANNERS - SCIENTISTS
DYER, RIDDLE, WILLS & PRECOURT, INC.
1505 E. COLONIAL DRIVE
ORLANDO, FLORIDA 32803
(407) 896-0594

HORIZON
engineering group, inc.

2500 Mollard Center Plaza, Suite 300 Mollard, Florida 32751
Certificate of Authorization No.: 00009544 Phone: 407 644-7755
LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407 644-7855



Lisa M. H. Olivera
Signed
DATE 6.25.07
REG. FLA. ENG. NO. 56056

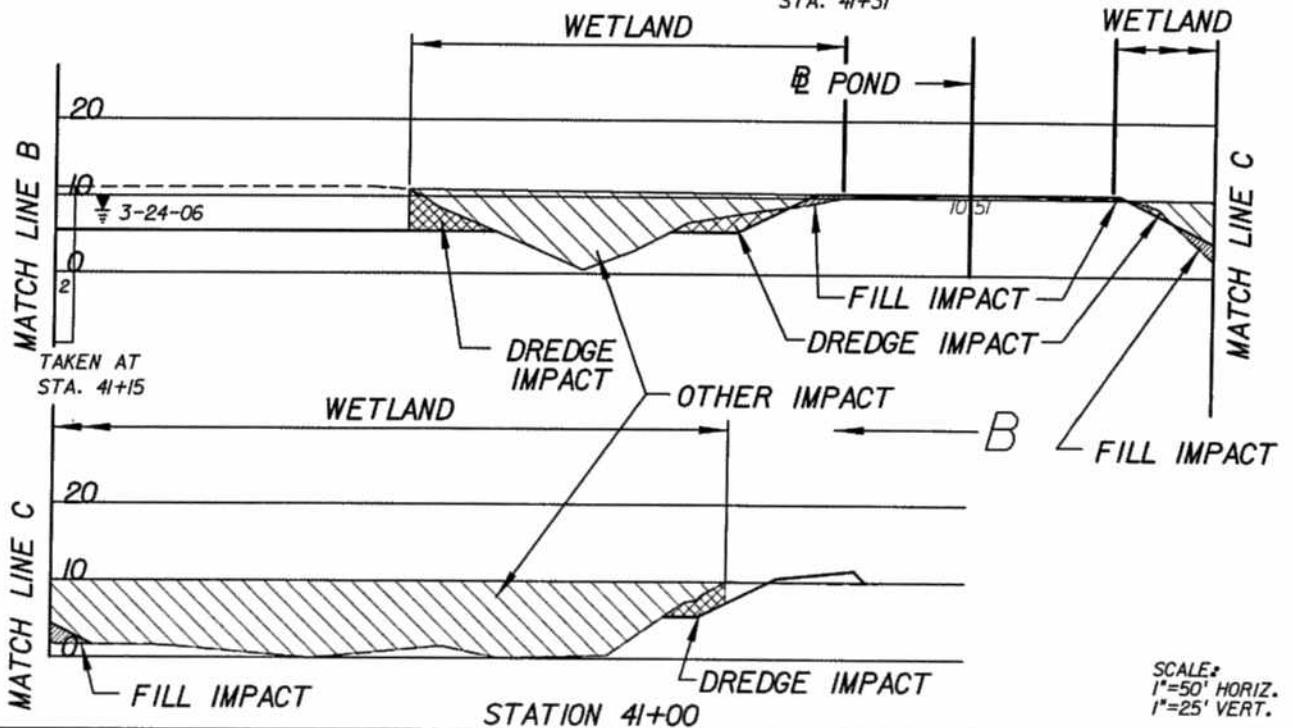
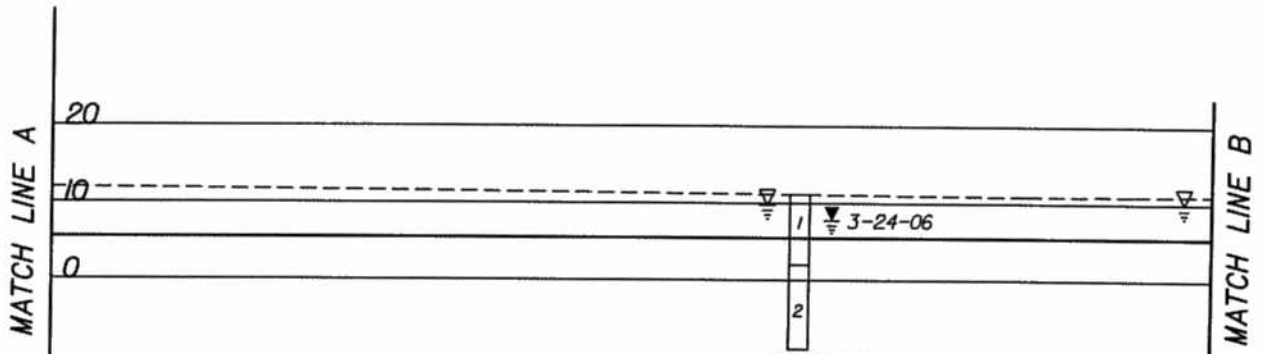
A →

20

10

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MATCH LINE A



SCALE:
1"=50' HORIZ.
1"=25' VERT.

PROJECT: FDOT SR 415
ST. JOHNS RIVER BRIDGE TO REED ELLIS ROAD
WATER BODY: ST. JOHNS RIVER
PURPOSE: DREDGE AND FILL SKETCHES
DATUM: NAVD

SECTIONS 23, 26, 27, 31, TOWNSHIP 19 SOUTH, RANGE 31 EAST
COUNTY OF SEMINOLE
COUNTY OF VOLUSIA
STATE OF FLORIDA
SHEET 14 OF 14



2500 Mallard Center Pkwy., Suite 300 Mallard, Florida 32751
Certificate of Authorization No.: 00009544 Phone: 407.644.7755
LISA M. H. OLIVERA, P.E. NO. 56056 Fax: 407.644.7855



Lisa M. H. Olivera
Signed
DATE 6-25-07
REG. FLA. ENG. NO. 56056

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

1. An eastern indigo snake protection/education plan shall be developed by the applicant or requestor for all construction personnel to follow. The plan shall be provided to the Service for review and approval at least 30 days prior to any clearing activities. The educational materials for the plan may consist of a combination of posters, videos, pamphlets, and lectures (*e.g.*, an observer trained to identify eastern indigo snakes could use the protection/education plan to instruct construction personnel before any clearing activities occur). Informational signs should be posted throughout the construction site and along any proposed access road to contain the following information:
 - a. a description of the eastern indigo snake, its habits, and protection under Federal Law;
 - b. instructions not to injure, harm, harass or kill this species;
 - c. directions to cease clearing activities and allow the eastern indigo snake sufficient time to move away from the site on its own before resuming clearing; and,
 - d. telephone numbers of pertinent agencies to be contacted if a dead eastern indigo snake is encountered. The dead specimen should be thoroughly soaked in water and then frozen.
2. If not currently authorized through an Incidental Take Statement in association with a Biological Opinion, only individuals who have been either authorized by a section 10(a)(1)(A) permit issued by the Service, or by the State of Florida through the Florida Fish Wildlife Conservation Commission (FWC) for such activities, are permitted to come in contact with an eastern indigo snake.
3. An eastern indigo snake monitoring report must be submitted to the appropriate Florida Field Office within 60 days of the conclusion of clearing phases. The report should be submitted whether or not eastern indigo snakes are observed. The report should contain the following information:
 - a. any sightings of eastern indigo snakes and
 - b. other obligations required by the Florida Fish and Wildlife Conservation Commission, as stipulated in the permit.

Revised February 12, 2004

U.S. Army Corps of Engineers
Permit # 545-2007-987
Date: 4/25/08
Attachment: 2



STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

July 2005

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

- a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
- b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.
- d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- e. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-232-2580) for north Florida or Vero Beach (1-561-562-3909) for south Florida.
- f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used. One sign measuring at least 3 ft. by 4 ft. which reads *Caution: Manatee Area* must be posted. A second sign measuring at least 8 1/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities.

U.S. Army Corps of Engineers
Permit # 5AT-2007-187
Date: 4/25/08
Attachment: 3



FWC Approved Manatee Educational Sign Suppliers

ASAP Signs & Designs

624-B Pinellas Street
Clearwater, FL 33756
Phone: (727) 443-4878
Fax: (727) 442-7573

Wilderness Graphics, Inc.

P. O. Box 1635
Tallahassee, FL 32302
Phone: (850) 224-6414
Fax: (850) 561-3943
www.wildernessgraphics.com

Cape Coral Signs & Designs

1311 Del Prado Boulevard
Cape Coral, FL 33990
Phone: (239) 772-9992
Fax: (239) 772-3848

Municipal Supply & Sign Co.

1095 Fifth Avenue, North
P. O. Box 1765
Naples, FL 33939-1765
Phone: (800) 329-5366 or
(239) 262-4639
Fax: (239) 262-4645
www.municipalsigns.com

Vital Signs

104615 Overseas Highway
Key Largo, FL 33037
Phone: (305) 451-5133
Fax: (305) 451-5163

Universal Signs & Accessories

2912 Orange Avenue
Ft. Pierce, FL 34947
Phone: (800) 432-0331 or
(772) 461-0665
Fax: (772) 461-0669

New City Signs

1829 28th Street North
St. Petersburg, FL 33713
Phone: (727) 323-7897
Fax: (727) 323-1897

**United Rentals Highway
Technologies**

309 Angle Road
Ft. Pierce, FL 34947
Phone: (772) 489-8772
or (800) 489-8758 (FL only)
Fax: (772) 489-8757

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

**When a manatee is within 50 feet of work
all in-water activities must**

SHUT DOWN

Report any collision or injury to:

1-888-404-FWCC (1-888-404-3922)

Florida Fish and Wildlife Conservation Commission

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

PERMIT NO. 4-117-109788-1

DATE ISSUED: April 8, 2008

PROJECT NAME: SR 415 (SJR to Reed Ellis Rd); FPID 407355-3-52-01

A PERMIT AUTHORIZING:

Construction of a surface water management for a 62.52-acre roadway widening project known as SR 415 (SJR to Reed Ellis Rd); FPID 407355-3-52-01.

LOCATION:

Section(s): 23, 26, 27, 34 Township(s): 19S Range(s): 31E

Seminole, Volusia Counties

ISSUED TO:

Florida Department of Transportation
719 S Woodland Blvd
De Land, FL 32720

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights of privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

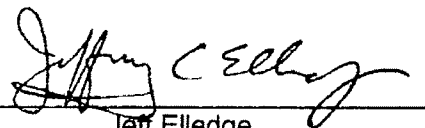
PERMIT IS CONDITIONED UPON:

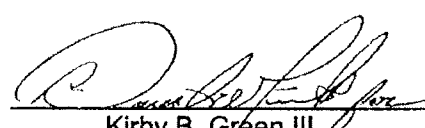
See conditions on attached "Exhibit A", dated April 8, 2008

AUTHORIZED BY: St. Johns River Water Management District

Department of Water Resources

Governing Board

By: 
Jeff Elledge
(Director)

By: 
Kirby B. Green III
(Assistant Secretary)

U.S. Army Corps of Engineers
Permit # SAJ-2007-987
Date: 4/25/08
Attachment: 4



"EXHIBIT A"
CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 4-117-109788-1
FLORIDA DEPARTMENT OF TRANSPORTATION
DATED APRIL 8, 2008

1. All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit.
2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.
3. Activities approved by this permit shall be conducted in a manner which do not cause violations of state water quality standards.
4. Prior to and during construction, the permittee shall implement and maintain all erosion and sediment control measures (best management practices) required to retain sediment on-site and to prevent violations of state water quality standards. All practices must be in accordance with the guidelines and specifications in chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988), which are incorporated by reference, unless a project specific erosion and sediment control plan is approved as part of the permit, in which case the practices must be in accordance with the plan. If site specific conditions require additional measures during any phase of construction or operation to prevent erosion or control sediment, beyond those specified in the erosion and sediment control plan, the permittee shall implement additional best management practices as necessary, in accordance with the specifications in chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988). The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.
5. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.
6. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District a Construction Commencement Notice Form No. 40C-4.900(3) indicating the actual start date and the expected completion date.
7. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an Annual Status Report Form No. 40C-4.900(4). These forms shall be submitted during June of each year.
8. For those systems which will be operated or maintained by an entity which will require an easement or deed restriction in order to provide that entity with the authority necessary to operate or maintain the system, such easement or deed restriction, together with any other final operation or maintenance documents as are required by subsections 7.1.1 through 7.1.4 of the Applicant's Handbook: Management and Storage of Surface Waters, must be submitted to the District for approval. Documents meeting the requirements set forth in these subsections of the Applicant's Handbook will be approved. Deed restrictions, easements and other operation and maintenance documents which require recordation either with the Secretary of State or the Clerk of the Circuit Court must be so recorded prior

to lot or unit sales within the project served by the system, or upon completion of construction of the system, whichever occurs first. For those systems which are proposed to be maintained by county or municipal entities, final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local governmental entity. Failure to submit the appropriate final documents referenced in this paragraph will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system.

9. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by the portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to local government or other responsible entity.
10. Within 30 days after completion of construction of the permitted system, or independent portion of the system, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing As Built Certification Form 40C-1.181(13) or 40C-1.181(14) supplied with this permit. When the completed system differs substantially from the permitted plans, any substantial deviations shall be noted and explained and two copies of as-built drawings submitted to the District. Submittal of the completed form shall serve to notify the District that the system is ready for inspection. The statement of completion and certification shall be based on on-site observation of construction (conducted by the registered professional engineer, or other appropriate individual as authorized by law, or under his or her direct supervision) or review of as-built drawings for the purpose of determining if the work was completed in compliance with approved plans and specifications. As-built drawings shall be the permitted drawings revised to reflect any changes made during construction. Both the original and any revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawing. All surveyed dimensions and elevations shall be certified by a registered surveyor. The following information, at a minimum, shall be verified on the as-built drawings:
 1. Dimensions and elevations of all discharge structures including all weirs, slots, gates, pumps, pipes, and oil and grease skimmers;
 2. Locations, dimensions, and elevations of all filter, exfiltration, or underdrain systems including cleanouts, pipes, connections to control structures, and points of discharge to the receiving waters;
 3. Dimensions, elevations, contours, or cross-sections of all treatment storage areas sufficient to determine state-storage relationships of the storage area and the permanent pool depth and volume below the control elevation for normally wet systems, when appropriate;
 4. Dimensions, elevations, contours, final grades, or cross-sections of the system to determine flow directions and conveyance of runoff to the treatment system;
 5. Dimensions, elevations, contours, final grades, or cross-sections of all conveyance systems utilized to convey off-site runoff around the system;
 6. Existing water elevation(s) and the date determined; and Elevation and location of benchmark(s) for the survey.

11. The operation phase of this permit shall not become effective until the permittee has complied with the requirements of general condition 9 above, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District in accordance with subsections 7.1.1 through 7.1.4 of the Applicant's Handbook: Management and Storage of Surface Waters, accepts responsibility for operation and maintenance of the system. The permit may not be transferred to such an approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall request transfer of the permit to the responsible approved operation and maintenance entity, if different from the permittee. Until the permit is transferred pursuant to section 7.1 of the Applicant's Handbook: Management and Storage of Surface Waters, the permittee shall be liable for compliance with the terms of the permit.
12. Should any other regulatory agency require changes to the permitted system, the permittee shall provide written notification to the District of the changes prior implementation so that a determination can be made whether a permit modification is required.
13. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and chapter 40C-4 or chapter 40C-40, F.A.C.
14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.
15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this permit or a formal determination under rule 40C-1.1006, F.A.C., provides otherwise.
16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of rule 40C-1.612, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to such sale, conveyance or other transfer.
17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.
18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District.
19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.
20. This permit for construction will expire five years from the date of issuance.
21. At a minimum, all retention and detention storage areas must be excavated to rough grade prior to building construction or placement of impervious surface within the area to be served by those facilities. To prevent reduction in storage volume and percolation rates, all accumulated sediment must be removed from the storage area prior to final grading and stabilization.

22. All wetland areas or water bodies that are outside the specific limits of construction authorized by this permit must be protected from erosion, siltation, scouring or excess turbidity, and dewatering.
23. Prior to construction, the permittee must clearly designate the limits of construction on-site. The permittee must advise the contractor that any work outside the limits of construction, including clearing, may be a violation of this permit.
24. The operation and maintenance entity shall submit inspection reports to the District one year after the operation phase permit becomes effective and every two years thereafter on District for EN-46. The inspection form must be signed and sealed by an appropriate registered professional.
25. The proposed surface water management system must be constructed as per the plans received by the District on February 8, 2007, as modified by Sheets 56-61 and 92-93 received on August 24, 2007.
26. This permit authorizes the placement of surcharge material within the approved dredge and fill limits for the proposed southbound lanes. Placement of the surcharge soil and construction of the temporary wildlife crossings and wildlife fencing must be conducted in accordance with the plans received by the District on March 6, 2008.
27. All synthetic hale bales denoted at the ends of the temporary wildlife culverts, as denoted on the plans received by the District on March 6, 2008, must be removed once the surcharge material has been stabilized with the specified performance sod.
28. Mitigation to offset 36.09 acres of impacts to wetlands and other surface waters authorized by this permit will be provided through Section 373.4137, F.S.
29. For activities on sovereign submerged lands that require a consent of use, lease, easement, management agreement, or use agreement, construction shall not commence until the sovereign submerged lands instrument has been fully executed. Within 30 days of recording a requisite lease or easement, the permittee must provide the District with two copies of said recorded document.
30. During the bridge construction activities, the permittee must monitor turbidity at the following locations:
 - a. Within the St. Johns River immediately upstream of the easternmost turbidity control measure (background sample).
 - b. Within the St. Johns River immediately downstream of the westernmost turbidity control measure.

The background sample must not be taken within any visible plume. Samples must be collected two times daily with a morning and afternoon sample at least four hours apart during the bridge construction activities.
31. Before removal of the turbidity control measures, the turbidity levels within the area surrounded by the turbidity control measures must be sampled to ensure no release of turbid water once the turbidity control measures are removed. The turbidity control measures may not be removed until the sample data indicates levels which do not exceed the State Water Quality Standards. This sample data must be included within the weekly turbidity data report.
32. If at any time the downstream turbidity level exceeds the State Water Quality Standards, then all measures required to reduce the turbidity including stopping all bridge construction

activities, must be taken. Bridge construction must not resume until the turbidity has returned to acceptable levels. Any such violation must be reported immediately to the District's Altamonte Springs Service Center.

33. All turbidity data must be submitted to the District's Altamonte Springs Service Center weekly. The data must contain the following information:

- permit number;
- date and time of sampling and analysis;
- statement describing collection, handling, storage, and analysis methods;
- a map indicating the location of the samples taken;
- depth of sample;
- antecedent weather conditions; and,
- tidal stage and/or flow direction.

34. To ensure the protection of manatees within the project construction area, the permittee shall comply with the standard manatee construction conditions recommended by the Florida Department of Environmental Protection, Bureau of Protected Species Management. Specifically, the permittee shall comply with the following manatee protection construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel are responsible for observing water-related activities for the presence of manatee(s).
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Marine Mammal Protection Act of 1972, The Endangered Species Act of 1973, and the Florida Manatees Sanctuary Act.
- c. Siltation barriers shall be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat.
- d. All vessels associated with the construction project shall operate at 'no wake/idle' speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- e. If manatee(s) are seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure protection of the manatee(s). These precautions shall include the operation of all moving equipment no closer than 50 feet of a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area of its own volition.
- f. A collision with and/or injury to a manatee shall be reported immediately to Florida Marine Patrol at 1-800-DIAL FMP (1-800-342-5367). Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-232-2580).

g. Temporary signs concerning manatees shall be posted prior to and during all construction/dredging activities. All signs are to be removed by the permittee upon completion of the project. A sign measuring at least 3 feet by 4 feet that reads "**Caution: Manatee Area**" will be posted in a location prominently visible to water-related construction crews. A second sign measuring at least 8 1/2 inches by 11 inches should be posted if vessels are associated with the construction, and should be placed visible to the vessel operator. The second sign should read "*Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shutdown if a manatee comes within 50 feet of operation. A collision with and/or injury to a manatee shall be reported immediately to the Florida Marine Patrol at 1-800-DIAL FMP (1-800-342-5367). The U.S. Fish and Wildlife Service should also be contacted in Jacksonville at 1-904-232-2580..*"

AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER

Submit this form and one set of as-built engineered drawings to the U.S. Army Corps of Engineers, Enforcement Branch, Post Office Box 4970, Jacksonville, Florida 32232-0019. If you have questions regarding this requirement, please contact the Enforcement Branch at 904-232-2907.

1. Department of the Army Permit Number: _____

2. Permittee Information:

Name _____

Address _____

3. Project Site Identification:

Physical location/address _____

4. As-Built Certification:

I hereby certify that the authorized work has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled and conducted by me or by a project representative under my direct supervision. I have enclosed one set of as-built engineering drawings.

Signature of Engineer

Name (Please type)

Florida Reg. Number

Company Name

Address

(Affix Seal)

City State ZIP

Date

Telephone Number

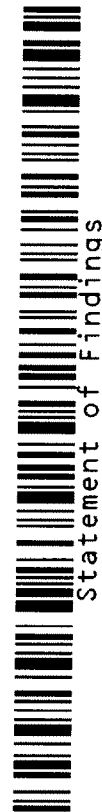
Deviations from the approved plans and specifications: (attach additional pages if necessary)

U.S. Army Corps of Engineers
Permit # 545-2007-987
Date: 4/25/08
Attachment: 5



Statement of Findings

Number: _____



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MAY 02 2008

MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Environmental Assessment and
Statement of Findings for the Above-numbered Permit Application

1. Applicant: Florida Department of Transportation, District 5
Attn: Patrick Muench
719 South Woodland Blvd.
DeLand, Florida 32720

2. Location, Project Description, Existing Conditions: The
proposed project is located along State Road (SR) 415 from the
St. Johns River to Reed Ellis Road, in Sections 23,26,27,34,
Township 19 South, Range 31 East, Volusia and Seminole Counties,
Florida.

The applicant proposes to widen SR 415 from two lanes to four
lanes in northern Seminole and southern Volusia County crossing
the St. Johns River. The widening is planned from the southern
shore of the St. Johns River to Reed Ellis Road. Approximately
19.62 acres of direct impacts and 12.56 acres of temporary
impacts to waters of the United States (wetlands and surface
waters) would be caused by the proposed widening. There are five
wetland and surface water habitat types within the project
corridor. The on-site wetlands are a contiguous mosaic of
wetland habitats associated with the St. Johns River floodplain
including mixed forested wetlands, freshwater marsh, wet prairie
and open water associated with the St. Johns River. Each wetland
habitat is comprised of appropriate vegetative species and
functioning above average. The upland habitats within the
project corridor include pastureland, fallow cropland, and
hardwood conifer mixed.

3. Project Purpose:

Basic: The widening of an existing road.

Overall: The widening of an existing road along with the
associated drainage improvements.

4. Scope of Analysis: The scope of analysis was limited to the
project site and included endangered species, essential fisheries
habitat concerns, and cultural resources.

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5. Statutory Authority: Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344).

6. Other Federal, State, and Local Authorizations Obtained or Required and Pending:

a. State Permit/Certification: Following an administrative appeal that has held up the issuance of a water quality certification; the St. Johns River Water Management District (SJRWMD) permit number 4-127-1097881-1 was issued on 8 April 2008.

b. Coastal Zone Management (CZM) consistency/permit: There is no evidence or indication from the State of Florida that the project is inconsistent with the Florida Coastal Zone Management Plan. Issuance of a SJRWMD permit certifies that the project is consistent with the CZM plan.

c. Other Authorizations: No information has been received regarding any other authorizations that may be required.

7. Date of Public Notice and Summary of Comments

a. The application was received on 12 February 2007. The application was considered complete on 12 March 2007. A public notice was issued on 13 March 2007, and sent to all interested parties including appropriate State and Federal agencies. All comments received on this application have been reviewed and are summarized below:

(1) Environmental Protection Agency (EPA): Did not respond to the public notice.

(2) U.S. Fish and Wildlife Service (FWS): Did not respond to the public notice.

(3) National Marine Fisheries Service (NMFS): Did not respond to the public notice.

(4) State Historic Preservation Officer (SHPO): By letter dated 4 May 2007, SHPO indicated that a significant archaeological site (8SE1310) is located near the proposed improvements and should be avoided. By letter dated 14 August 2007, SHPO indicated that a significant archaeological site

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(8SE1310) is located outside of the project's area of potential effect. SHPO indicated that the proposed project would have no effect on any sites listed, or eligible for listing, in the National Register of Historic Places, or otherwise of national, state, or local significance.

(5) No comments were received from State or Local agencies, organizations, individuals or any other interested party.

b. Applicant's response to the comments: No comments were forwarded to the applicant however, the applicant was asked to provide a detailed alternatives analysis and minimization of wetland impacts. The applicant responded via letter dated 25 June 2007. The response has been summarized in paragraph 8 below.

8. Alternatives:

a. Avoidance (No action, uplands, availability of other sites): The no action alternative would not allow for project completion. SR 415 is part of East Central Florida's transportation roadway network. It provides system linkage between Seminole and Volusia Counties and serves as an alternate route to both Interstate 4 (I-4) to the west and Interstate 95 (I-95) to the east. No alternative roadways exist in the vicinity of the project and the construction of a new road to alleviate deficiencies along SR 415 would cause significant direct and secondary impacts to the St. Johns River.

The applicant has completed a Project Development and Environmental (PD&E) Study for the proposed project. The study addresses purpose and need, defines capacity needs, safety needs, and evacuation needs of the roadway. The study also evaluates alternative alignments. The final alternative selected includes the optimum typical section that ensures the highest degree of safety for the public while minimizing the environmental impacts to the greatest extent possible. A copy of the PD&E study can be obtained from Florida Department of Transportation, District 5 in Deland, Florida.

b. Minimization (modified project designs, etc.): The Corps requested the applicant to provide detailed information regarding avoidance and minimization of wetland impacts via letter dated 24 April 2007. The Corps requested the applicant evaluate a design

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alternative that eliminated the proposed median and install guard rails and retaining walls. The applicant provided a detailed response via letter dated 26 June 2007, which included a *Project Memo* dated 24 May 2007. This *Project Memo* defines minimization measures accomplished to reduce impacts to wetlands, defines the functional classification of the roadway, describes the highway function requirements, design speed limitations and settings, and rural and urban arterial design requirements. This *Project Memo* shall be made part of this EA-SOF and is included as Attachment 1.

The applicant evaluated two typical designs following PD&E. The first allows for a 40-foot median and the second calls for a 20-foot median including a guard rail divider. The applicant concluded that the final roadway design which includes a 40-foot median salvages the existing 2-lane roadway as well as the existing bridge reducing construction cost by as much as 19.2 million dollars. Although this alternative causes additional wetland impacts by approximately 3 acres, it considerably reduces project cost and allows for future widening without developing outside of the future right-of-way.

In an effort to reduce wetland impacts, no storm water ponds were placed within the St. Johns River Floodplain. An alternative storm water treatment method has been employed, "exfiltration". SJRWMD has reviewed and approved the treatment method ensuring it will meet water quality certification.

In conclusion, the project has been minimized to the maximum extent possible taking into consideration cost, existing technology, and logistics in light of overall project purpose.

c. Compensatory Mitigation (Wetland enhancement, creations, etc.): The applicant has proposed compensatory mitigation to offset all unavoidable impacts to Corps jurisdictional wetlands. Wetland impacts will be mitigated pursuant to the Senate Bill 1986 Rule - Section 373.4137 Florida Statutes (F.S.). The applicant has completed a Wetland Rapid Assessment Procedure and determined the direct impacts would cause 10.55 (4.47 forested and 6.01 non-forested and 0.07 surface water) functional units of loss. The Corps has modified the functional assessment and determined the total functional loss for direct impacts is 12.44 units. The direct functional loss includes 5.43 units of forested wetlands and 7.01 units of non-forested wetlands. The construction of the roadway requires temporary impacts to

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herbaceous wetlands within the right-of-way. The applicant has included notes in the construction plans which require all fill material to be removed and the wetlands to be re-graded to pre-existing contour. The temporary impacts are expected to be in place for approximately 5 years. Temporary impacts will cause a drop in wetland function adjacent to the roadway during construction and regeneration. The Corps has determined by incorporating a lag time of 10 years (0.8611) the temporary impacts will be fully mitigated; therefore, $0.7fu \times 0.8611 = 0.60$. Temporary functional loss will total 1.14 functional units. To compensate for secondary impacts extending beyond the roadway within St. Johns River floodplain the applicant has created a 300-foot polygon extending from the edge of proposed pavement into the flood plain. This polygon totals 110 acres and will cause 9.17 functional units of loss. The total functional loss associated with this project is 22.75 units.

These projects are part of SJRWMD FDOT Mitigation Plan, mitigation group SJ 42. Total anticipated State of Florida wetland impacts for the group have increased from 91.54 acres to 106.69 acres. These SR 415 projects, which are the last remaining projects in the group to be permitted, are responsible for the increase in estimated acreage of impact. The State impacts are greater than the Federal impacts and are as follows:

Financial Management (FM)# 4073553 36.09 acres

FM# 4073554 5.54

FM# 4073551 6.96

Total impact of 48.59 acres

The District will add another preservation and enhancement project, the Menard parcel (695.5 acres) to this mitigation group and increase the number of mitigation bank credits purchased to offset the increase in impact acres. The total preservation and enhancement for this mitigation group is now 4614.9 acres in addition to 71 mitigation bank credits. For the SR415 projects the 48.59 acres of impact will be offset by 2101.77 acres of preservation and enhancement and the purchase of 32.3 mitigation bank credits.

The Corps will require the deduction of 23 credits from an approved mitigation bank. The mitigation provided by the

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applicant fully offsets the impacts which would be incurred by the project as proposed.

9. Evaluation of the 404(b)(1) Guidelines: The proposed project has been reviewed in accordance with the 404 (b)(1) Guidelines. The review shows that all the alternatives have been reviewed and it has been adequately demonstrated that the proposed alternative is the least environmentally damaging and only practicable alternative considering cost, existing technology and logistics. It would not cause or contribute to violations of State Water quality standards, jeopardize the existence of any endangered species or impact a marine sanctuary. No significant degradation would be expected and all appropriate and practicable steps have been taken to minimize impacts.

10. Public Interest Review:

a. Corps analysis of comments and responses: All comments received in response to the public notice have been considered in the following public interest review.

b. All public interest factors have been reviewed, including but not limited to the effects the work might have on conservation, economics, esthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, land use, navigation, shore erosion and accretion, recreation, water quality, safety, and consideration of property ownership. It has been determined that the proposed work will not adversely impact any of the public interest factors.

c. Describe the relative extent of the public and private need for the proposed structure or work: Public needs include increased travel safety, employment opportunities, and a potential increase in the local tax base.

d. Describe the practicability of using reasonable alternative locations and methods to accomplish the objective of the purposed work where there are unresolved conflicts as to resource use: There are no unresolved conflicts regarding resource use.

e. Describe the extent and permanence of the beneficial and/or detrimental effects which the proposed work is likely to have on the public and private uses to which the area is suited: The beneficial effects for public transportation may include an

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increase in public safety, increased carrying capacity of the roadway and the more effective movement of vehicular traffic. The increased carrying capacity may also facilitate intrastate/interstate commerce.

f. Threatened or Endangered Species: The Corps initiated formal consultation with the FWS via letter dated 23 April 2007, stating the Corps has made a determination that the proposed work "may affect" the West Indian Manatee. The Corps has also determined the proposed project "may affect, but is not like to adversely affect" the wood stork with the inclusion of wetland compensation for the loss of wetland habitat and "may affect, but is not like to adversely affect" the eastern indigo snake with the inclusion of the Standard Protection Measures for the Eastern Indigo Snake in any permit is issued.

FWS responded via letter dated 7 June 2007, requesting the inclusion of the Standard Manatee Conditions for In-Water Work (July 2005 version) and the following special condition:

The placement of mooring fenders on barges and other larger vessels such that when moored together, the fenders provided a minimum stand-off distance, at and below the water line, of four feet under maximum compression.

The FWS determined that with the inclusion of conditions above the project may affect, but is not likely to adversely affect the West Indian manatee. Additionally, the FWS concurred with the Corps determination for the indigo snake and the wood stork.

g. Essential Fisheries Habitat (EFH): The Corps determined the proposed project would not affect EFH. The NMFS did not provide any EFH conservation recommendations in response to the public notice. Therefore, the Corps is satisfied that the consultation procedures outlined in 50 CFR Section 600.920 of the regulation to implement the EFH provisions of the Magnuson-Stevens Act have been met.

h. Corps Wetland Policy: The proposed wetland alteration is necessary to realize the project purpose and should result in minimal adverse environmental impacts. The benefits of the project would outweigh the minimal detrimental impacts. The project would result in a no-net loss of wetland functions and values. Therefore the project is in accordance with the Corps wetland policy.

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i. Cumulative and Secondary Impacts: The applicant evaluated cumulative and secondary impacts in their PD&E study. To reduce any adverse secondary impacts the applicant has proposed compensatory mitigation within the same drainage basin as the impacts. The applicant will install wildlife fencing along the roadway to reduce potential impacts to wildlife. Additional culverts will be installed to aid in wildlife movement as well as reduce potential hydrologic impacts. The applicant will follow best management practices during construction to further reduce any potential secondary impacts. Additionally, the Corps has evaluated secondary impacts to wetlands within the project corridor. Secondary impacts could occur as a result of increased traffic, noise, light, road debris, habitat fragmentation, soil disturbance, construction activities, hydrology, increased mortality, altered chemical environment, introduction of nuisance and exotic species, and vibration. The applicant has proposed additional compensatory mitigation to off set potential adverse secondary impacts.

j. Corps Comments and Responses: See paragraph 7.b. above.

11. Determinations:

a. Finding of No Significant Impact (FONSI). Having reviewed the information provided by the applicant and all interested parties and an assessment of the environmental impacts, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement will not be required.

b. Compliance with 404(b)(1) guidelines. Having completed the evaluation above, I have determined that the proposed discharge complies with the 404(b)(1) guidelines.

c. Public interest determination: I find that issuance of a Department of the Army permit is not contrary to the public interest.

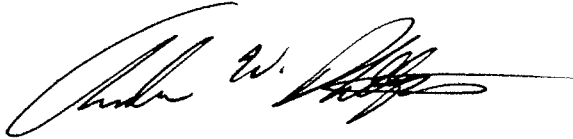
d. Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de

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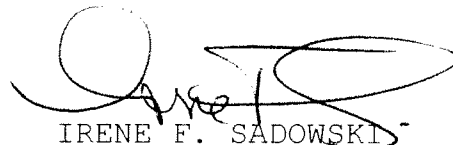
minimis levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

PREPARED BY:



ANDREW W. PHILLIPS
Project Manager

REVIEWED BY:



IRENE F. SADOWSKI
Chief, Cocoa Permits
Section

APPROVED BY:



PAUL L. GROSSKRUGER
Colonel, Corps of Engineers
Commanding

CF:

CESAJ-RD-PE

Project Memo

To: Sam Letcher, FDOT Project Manager
From: Jerry C. Warren, Horizon Project Manager
Date: May 24, 2007

Re: SR415 from Seminole County Line to Reed Ellis Road
FM No.: 407355-3-32-01
Response to comment #9 of SJRWMD's RAI dated March 7, 2007
and comment #2 of USACOE RAI dated April 24, 2007

Horizon
Project Number: 105.01.05

This memo is in response to the Request for Additional Information (RAI) from SRJWMD dated March 7, 2007 and the RAI from the USACOE dated April 24, 2007 regarding the efforts made to select a typical section that minimizes the impact to wetland resources. This memo is intended to serve as a summary of the efforts conducted during the Design Phase of the project that further evaluated the typical section recommended by the Project Development & Environmental (PD&E) Study. These efforts have resulted in a further reduction of the environmental impacts for this section of SR415.

SJRWMD Comment No. 9:

The submitted environmental assessment report references measures such as steeper side slopes and alternate treatment designs that were considered during the PD&E study to eliminate or reduce impacts associated with this road-widening project. Sufficient information was not provided to support the chosen alternative that results in greater impacts to wetland resources. As was indicated at numerous PD&E advisory group meetings, alternatives that involve a narrower median, including measures to reduce the design and posted speed limit, must be considered. While it is recognized that the design manual specifies certain optimal parameters for median design and speed posting, it also provides alternatives for those situations where the optimal design is not possible or practical. As required by subsection 12.2.1, ERP A.H., all practicable design alternatives that would reduce or eliminate impacts must be considered. Please provide a detailed explanation of each alternative and expand on the unfeasibility of each design. For example, the explanation should thoroughly explain why a narrower median and speed reductions cannot be implemented. Please provide the relevant cited portions of the report with your submittal. [40C-4.301(l) (d), 40C-4.302(l)(a), 40C-4.301(3), F.A.C.]

USACOE Comment No. 2

Minimization. It is the Corps opinion that impacts to wetlands can be reduced by eliminating the proposed median and sidewalks through wetlands.

- a. Please provide an evaluation of all practicable measures to minimize harm to wetlands which includes all design analyses completed.
- b. Please provide the roadway design standards which support your request for a divided roadway. The design standards must provide justification of the median width, fill slopes, and shoulder widths.
- c. (Not included in this memo response)
- d. Please quantify all impact reductions.
- e. Please provide a cost analysis of alternative roadway alignments which eliminate median width and reduce the cross-section of the roadway.

Response:

The roadway typical section that is proposed in the Design Phase of the project was a result of refining the typical sections that were analyzed during the PD&E Phase as well as in-depth research and analysis with

Horizon Engineering Group

SAT-2007.927 (IP AM)
Attachment 1 to EA-50F

respect to providing the optimum typical section that ensures the highest degree of safety for the motoring public while minimizing the environmental impacts to the greatest degree possible. Studies show that widening the roadway is required not only from a functional standpoint, but also to increase the safety aspect as well.

This section of roadway is unique in that it traverses the floodplain of the St. Johns River. The design team realizes that it is imperative to ensure that the rural character of the roadway is preserved and impacts to the environment are minimized. During the PD&E phase and continuing into the design phase, all parties with an interest in this corridor have discussed alternatives that would balance the final roadway typical between providing a safe roadway to travel as well as one that reduces impacts as much as practical to the environment.

Many factors were analyzed along this corridor above and beyond just the roadway typical section in an effort to minimize the overall impacts to the environment. Items that have been further refined in the design phase include the following:

1. Petitioning the public, regulatory, and governmental entities to allow the overall vertical clearance requirement over the St. Johns River to remain at its current level of 25 feet. The PD&E recommended a 45 foot vertical clearance. This successful effort resulted in reducing impacts in two areas: First: Salvaging 2000 feet of existing bridge therefore reducing additional construction impacts for almost 4/10 of a mile; Second: Constructing the new parallel bridge at 25 foot vertical clearance rather than the 45 foot clearance recommended in the PD&E.
2. Salvaging the existing 2-lane roadway in this section of the project. The existing roadway will become the north bound lanes of the new 4-lane roadway. The PD&E recommended removing the existing 2-lane roadway and reconstructing the new lanes at elevation of 18.0 feet. The existing roadway elevation is set at 10.5 feet.
3. Relocating the multi-use trail to the east side of the roadway (adjacent to the salvaged lanes referred to above). This allowed for the trail elevation to be lowered to an elevation to match the existing roadway. The PD&E recommended an elevation at approximately 16.5 feet.
4. Redesigning the exfiltration drainage system such that the pipe system is stacked in a horizontal position rather than vertical. This allowed the elevation of the new lanes to be reduced to elevation 12.0 feet. The PD&E recommended an elevation of 18.0 feet.

The results of the efforts in numbers 2 through 4 above reduced the overall footprint of the roadway typical section from 231 feet wide to 205 feet wide. The smaller footprint resulted in reducing impacts to right of way by 9.7 acres and wetland impacts by 5.1 acres (see Table 1 – Impacts).

Continuing in the spirit of reducing the impacts to the corridor, the typical section that is now proposed was further analyzed and subjected to extreme scrutiny. In-depth consideration was given to reducing the design speed, looking at an urban typical section (curb and gutter in lieu of swales), reducing the median width, and other alternatives that would minimize the impacts. However, an over riding consideration was always the safety of the motoring public. The following discussion reflects a portion of the research that was conducted to help decide the final typical section. The text that is italicized reflect verbiage taken from the American Association of State Highway and Transportation Officials (AASHTO) manual titled "*A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS*", dated 2001. This manual reflects the guidelines in which the Federal Highway Administration (FHWA) and the Florida Department of Transportation (FDOT) designs all roadways.

The design phase included researching the possibility of reducing the design speed of the roadway through this corridor. That included looking into the current functional classification of the roadway. Currently this section of SR415 is classified as a "Rural Minor Arterial" roadway. The roadway classification has a direct correlation to the surrounding land uses, population, and the type of roadway that currently exists.

Functional Classification

SR415's Functional Classification is identified as a Rural Minor Arterial.

Chapter One: Highway Functions.

Page 6: Two major considerations in classifying highways and street networks are access and mobility. The conflict between serving through movement and providing access necessitates the differences and graduations in various functional types. The extent and degree of access control is thus a significant factor in defining the functional category of a roadway. Regulated limitation of access is needed on arterials to enhance their primary function of mobility. Conversely, providing more access is required for local roadways.

Page 8: Urban areas are those places within boundaries set by the responsible state and local officials having a population of 5,000 or more. Rural areas are those areas outside the boundaries of urban.

Page 9: Minor arterials constitute roadways which should provide for relatively high travel speeds and minimal interference to through traffic.

Page 13: Arterials are expected to provide a high degree of mobility. Therefore they should provide a higher operating speed and level of service.

With respect to the above text from the AASHTO manual, along with the current characteristics of the corridor as well as the desire from all parties associated with this project to keep the corridor "rural", the functional classification of the roadway should remain as is.

Design Speed

Chapter Two: Design Controls and Criteria.

Page 67: The design speed should be a logical one with respect to the topography, anticipated operating speed, the adjacent land use, and the functional classification of the roadway. With exception to local streets, every effort should be made to use as high a design speed as practical to attain a desired degree of safety, mobility, and efficiency within the constraints of environmental quality, economics, aesthetics, and social or political impacts. Above minimal design values should be used where practical. Design features such as width of lanes, shoulders, and clearances to walls and rails are not directly related to design speed, but they do affect vehicle speeds. Therefore wider lanes shoulders and clearances should be considered for higher design speeds.

Page 68: The selected design speed should be consistent with the speeds that drivers are likely to expect on a given highway facility. A low design speed should not be selected where the topography is such that drivers are likely to travel at high speeds. Drivers do not adjust their speeds to the importance of the highway, but to their perception of the physical limitations of the highway and its traffic. In particular, curves with low design speeds (relative to driver expectations) are frequently overdriven and tend to have poor safety records. Therefore it is important that the design speed used for horizontal curve design be a conservative reflection of the expected speed on the constructed facility.

Page 70: In rural areas, a high percentage of vehicles are usually able to travel at near the free-flow speed governed by geometric design elements; therefore the selection of an appropriate design speed is particularly important.

Chapter Seven: Rural and Urban Arterials.

Page 448: Rural arterials should be designed for speeds of 40mph to 75mph depending on terrain, driver expectancy and in the case of reconstruction projects, the alignment of the existing facility. Design speeds in the upper range (60 mph to 75 mph) are normally used in level terrain, design speeds in the midrange (50 mph to 60 mph) are normally used in rolling terrain, and design speeds in the lower range (40 mph to 50 mph) are used in mountainous terrain.

This stretch of SR415 is very rural in nature. The terrain is virtually flat. There are only two side streets (at the very north end of the project), two proposed median openings, no signalized intersections, no commercial

businesses or residential areas within the corridor, and only 4 driveways that will be used very little (for access to St. Johns River property and the retention pond at the north end of the project). There are three existing curves along this stretch that are sharp enough to require superelevation to meet current design standards. The likelihood of any development within these project limits is very improbable; therefore the roadway will likely remain rural in character far into the future.

Further research was gathered by conducting a Vehicle Speed Study along this corridor. This procedure is practiced nationwide to determine what the running speed of the vehicular traffic is for a certain stretch of roadway and is used for establishing safe posted speed limits as well as design criteria. The speed study takes several measurements, one of which is defined as the 85th-percentile speed. This is the actual speed at which 85% of the driver population for a given stretch of road is traveling. This speed study was recently conducted to verify what the current running speed is for this section of SR415. The 85th-percentile speed for this section of roadway was measured to be 62.5mph southbound and 63.3mph northbound for an 85th-percentile speed of 63mph in both directions (see attached Vehicle Speed Study).

Existing posted speeds along this corridor are currently at 55mph based on a design speed of 60 mph. There is no evidence that posting the speeds at a lower rate and designing the roadway at lower design speeds would result in drivers reducing their speeds. Upon widening, this section of SR415 will become a 4-lane divided roadway that will resemble a limited access facility (such as an interstate or freeway). Even with strict enforcement, artificially low posted speeds will be largely disregarded.

Based on the guidance offered by AASHTO and the physical characteristics of the corridor, the design team had eliminated the option of reducing the design speed. Reduction in design speeds for this roadway would be in direct contradiction of AASHTO guidelines and offer driving conditions that would likely prove to be dangerous to the motoring public. The design speed of 60 mph was selected based on the fact that the existing roadway was designed based on this speed limit, the 85-percentile speed is near this speed limit, and this speed is the lower range of speeds recommended by AASHTO for a roadway with its characteristics. This lower range would reduce the amount of superelevation in the three curves which results in reducing the amount of fill in those curves (which in turn keeps the toe of slope from extending further into the wetlands). Because the design speed was set at 60 mph, that eliminated the possibility of incorporating the "curb and gutter" typical section. Curb and gutter roadways are not designed with speeds in excess of 45 mph.

The design team then began looking at ways to further reduce the foot print of the typical section. This included analyzing a typical section that included reducing the median width and providing a concrete barrier wall or guard rail in the median. The design team referred to the "*Roadside Design Guide*" dated 1996 to help analyze the results of introducing the barrier in the median. The "*Roadside Design Guide*" manual is published by AASHTO and used by FHWA and FDOT in analyzing medians barriers. According to the manual, introducing a barrier in the median adds an additional hazard to the roadway, especially in the areas of the curves, and should only be considered if cross-over accidents are common or there are no alternative to reducing the median width. The manual further states;

Chapter 6, Page 6-1: ...after a median barrier is installed, accident severity may decrease, but accident frequency may increase since the space available for return-to-the-road maneuvers is reduced. Also another consideration when implementing median barriers is the ability to shield the motorist from the exposed end of the barrier, which becomes an additional hazard.

The design team considered a typical section that depicted a reduced median width with a barrier wall. The median was reduced to 22.0 feet (two 10-foot paved shoulders and a 2.0 foot wide concrete barrier). During the analysis it was found that this would negate all of the key features highlighted on page one of this report (numbers 1 through 4) that were utilized to minimize the impacts to the corridor. The ramifications include:

1. Salvaging the existing 2-lane roadway would not be possible. It would have to be raised an additional 1.5 feet to an elevation similar to the new southbound lanes to accommodate median crossovers. This coupled with the addition of a barrier wall and the 10 foot paved shoulders would increase the cost of the project by approximately \$2.2 million dollars.

2. The 2-lanes mentioned above will now have to be treated for stormwater runoff. An additional exfiltration system will have to be constructed on the east side of the corridor to accommodate the new treatment requirements. This would increase the cost of the project by approximately \$2.5 million dollars.
3. The exfiltration system mentioned above will have to be constructed under the proposed trail. This will require the trail to be raised by an additional 1.5 feet as well, further adding an additional \$90 thousand dollars.
4. The biggest impact will likely be that the existing bridge will no longer be salvageable. Preliminary design analysis has shown that raising the existing roadway as mentioned above will have a domino effect in connecting to the existing bridge. The north 1000 feet of the existing bridge will likely have to be reconstructed to accommodate the revised vertical curve required to match the elevated roadway. Discussions with FDOT officials indicate that they would likely not remove that large of a section of the bridge without considering removing the entire structure. The additional costs to the project to replace this structure is estimated to be \$14.5 million dollars.

The impacts were analyzed and although the wetland impacts were reduced (1.4 acres) the design team did not consider them to be substantial enough to override the reduction in safety that the 40 foot median offered (see Table 1 - Impacts) as well as the additional anticipated costs.

Another factor the design team considered during the selection of the typical section is the likelihood that the roadway will be widened to six lanes in the future. Although traffic counts and projections do not indicate six lanes are required for the design year (2025), the likelihood that this may occur in the years following the design year is very probable. This section of SR415 is part of the overall SR415 corridor that provides a connection between two highly developing areas. Development pressures both in Seminole County and Volusia County are extreme and the SR415 corridor will continue to see growth. It is also one of only a few crossings over the St. Johns River within Central Florida. If the roadway is ever widened to six lanes and the reduced median typical was constructed, the widening will have to occur to the outside of the lanes. This will require additional Right of Way and result in additional wetland impacts.

A consideration by the design team was to provide a typical section that would result in impacting the corridor **only once** for many years to come. The typical section for the roadway currently being proposed allows future widening to occur within the 40 foot median. Providing a six lane section in the future could be done with no additional right of way or environmental impacts. As part of this project the new parallel bridge structure over the St. Johns River (that will become the south bound lanes) is currently being designed to accommodate a future widening to six lanes. This is being done specifically such that in the future no additional right of way will be required and no additional environmental impacts will occur.

Provided below are the final typical sections analyzed during the design phase. They include, as a comparison:

Recommended PD&E typical section

Option 1: Recommended typical section by the Design Team

Option 1A: Recommended typical section by the Design Team for future six lane

Option 2: Reduced median typical section

Option 2A: Reduced median typical section for a future six lane

The future six lane sections are shown only as a reference to compare the ultimate impacts should the roadway require widening to six lanes in the future. Impacts for each of the typicals are provided in the Table 1- Impacts. At first glance, the reduced median typical offers the least impacts from an environmental and right of way standpoint, however, it compromises safety, will increase the overall project costs, and will result in future impacts if it becomes necessary to widen the roadway.

Table 1: Impacts

	PD&E Phase	Design Phase Recommended 40' Median (Option 1 and 1A)	Reduced Width 22.0' Median (Option 2)	Future Reduced Width 22.0' Median (Option 2A)
Right of Way Width	231'	205'	188'	212'
Right of Way (acres)	26.7	17.0	13.5	19.3
Wetland (acres)	25.9	23.5	21.0	25.4
Flood Plain (acres)	14.2	10.1	7.5	11.7

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**FLORIDA DEPARTMENT OF TRANSPORTATION
VEHICLE SPOT SPEED STUDY**

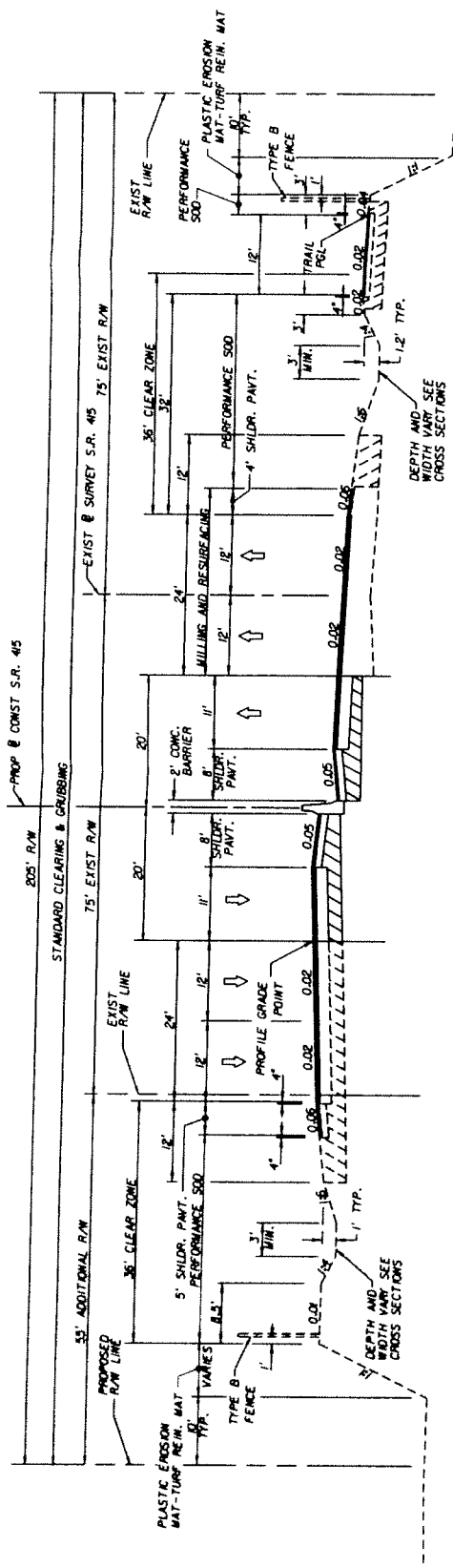
LOCATION ID: <u>SR 415</u>		SECTION: <u>79120</u>	
LOCATION: <u>S-1</u>		City: <u>Osteen</u>	MP: <u>1.300</u>
SPEED LIMIT (MPH): <u>55</u>		Weather: <u>Sunny</u>	County: <u>Volusia</u>
DATE: <u>05/31/07</u>			
OBSERVER: <u>J.G.</u>		Time From: <u>10:00 AM</u>	To: <u></u>
REMARKS: <u>3/10 of mile south of count station 25</u>			

Southbound		SPEED MPH	Northbound		Both Directions	
Cumulative Total	TOTAL		TOTAL	Cumulative Total	TOTAL	CUM TOTAL
		85				
		84				
		83				
		82				
		81				
		80				
		79				
		78				
		77				
		76				
		75				
100	1	74			1	200
99	1	73	1	100	2	199
		72				
		71				
		70				
		69	1	99	1	197
98	1	68	1	98	2	196
97	1	67	4	97	5	194
96	3	66	3	93	6	189
93	3	65	3	90	6	183
90	4	64	3	87	7	177
86	2	63	5	84	7	170
84	9	62	4	79	13	163
75	5	61	5	75	10	150
70	10	60	14	70	24	140
60	13	59	13	56	26	116
47	8	58	7	43	15	90
39	9	57	7	36	16	75
30	6	56	7	29	13	59
24	12	55	9	22	21	46
12	6	54	6	13	12	25
6	4	53	2	7	6	13
2	2	52	4	5	6	7
		51				
		50	1	1	1	1
		49				
		48				
		47				
		46				
		45				
	100	TOTALS	100		200	

Southbound	Speed Data Summary	Northbound	BOTH
62.5	85th Percentile Speed (mph)	63.3	63.0
58.2	50th Percentile Speed (mph)	58.5	58.4
53-62	10 mph PACE	54-63	54-63



PD&E Recommended Typical Section

[illegible]

